

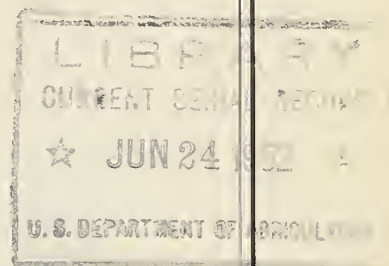
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**COSTS OF HANDLING EGGS
BY
SELECTED COOPERATIVES
IN THE NORTH CENTRAL STATES
(Preliminary Report)**



By
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and
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Based on a study conducted with funds provided by the
Agricultural Marketing Act (RMA Title II)

COOPERATIVE RESEARCH AND SERVICE DIVISION

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CONTENTS

	<u>Page</u>
Summary-----	i
Plan and procedure of study-----	2
Organizations selected-----	2
Location, type, products handled, and size-----	3
Period of study-----	4
Comparative basis-----	5
Functions covered-----	6
Collection of data-----	8
Direct costs-----	9
Indirect or overhead costs-----	9
Other information-----	11
Costs-----	11
Aggregate costs-----	11
Direct costs-----	12
Labor costs by plant operations-----	12
Packing materials-----	22
Association trucks-----	24
Other direct costs-----	24
Total direct costs-----	24
Indirect costs-----	27
Plant and non-plant-----	28
Application of cost data-----	28
Output per man-hour-----	38
By operations-----	38
By associations-----	38

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SUMMARY

Since a large part of the consumer's dollar spent for eggs goes for handling and marketing costs, it is important that the producer-consumer price spread be kept as narrow as possible for the benefit of both the producer and the consumer. Unduly high costs and the resulting high prices tend to discourage consumption and, thereby, adversely affect production and producer prices.

On this account, studies have been undertaken to determine the costs of handling eggs, the factors which affect those costs, and ways of reducing costs which are out of line. This is a preliminary and limited report -- essentially a statistical summary -- covering one of these studies. It was made from an intensive study of 16 selected cooperative associations in seven North Central States.

The three primary objectives of the study are: (1) to obtain costs, labor requirements, and other information pertaining to the several egg-handling services or operations and to make comparisons of such, (2) to determine and measure the factors affecting costs, and (3) to check, measure, and interpret the findings by applying them to actual field and operating conditions.

This report covers phase one. It describes briefly the plan, procedure, and scope of the study. Tables throughout the report give individual plant costs, average costs, and ranges in costs. These will serve as standards for cooperatives and others in making comparisons of costs and labor efficiency. It confines itself then to comparisons of (a) direct costs by associations and individual operations, (b) indirect (overhead) costs by associations but not by individual operations, (c) output per man-hour of labor by associations and individual operations, and (d) the application of the cost data.

Later reports will cover phases two and three of the objectives.

Information on operations, volumes, costs, and labor requirements of the cooperatives selected was obtained during two field visits of one week each to the 16 associations during 1950-51. One visit was made during the period of relatively low receipts and the other during a period of relatively high receipts to measure the seasonal influence of volume on costs.

The volume of eggs handled by these associations during the year 1950 ranged from 19,300 to 140,600 cases. The total for the 16 associations was 923,808 cases.

Activities in egg-handling organizations vary both in number and relative importance. Because of these differences, a comparison of over-all cost among organizations is meaningless. Therefore, in this study, the egg-handling activities were broken down into 13 operations -- collecting, receiving, inspecting, shell cleaning, shell treating, egg breaking,

candling, cartoning, packing, coopering, stacking and holding, loading out, and delivering -- and the cost of each determined. This breakdown makes it possible for an organization to compare its cost for any operation with that of the cooperatives studied and to calculate its cost for any particular pack of eggs.

The preliminary analysis reveals a wide variation in direct costs per unit for most of the 13 operations among the 16 plants studied. To illustrate, the direct labor cost for candling varied from 28.0 to 59.2 cents per case for the week of low receipts. For cartoning it ranged from 16.0 to 51.9 cents. For 12 operations (egg breaking not included) the average of the high direct labor costs per case was 3.9 times that of the low averages.

Similarly, the output per man-hour varied widely. The case output per man-hour for cartoning varied from 1.7 to 6.5 cases during the week of low receipts. In other words, cartoning required nearly four times as many man-hours at one plant as at another. For 12 operations, the average of the high outputs per man-hour was 4.1 times the average of the low outputs per man-hour.

On the basis of the number of cases received, indirect (overhead) costs ranged from 18.6 to 61.2 cents per case for the 16 associations for the low receipts week. However, indirect costs are not comparable because the number of operations to which they apply and the volume of eggs handled in each operation vary widely.

The total of all costs, direct and indirect, of handling eggs averaged 3.7 cents per dozen for wholesale-graded eggs packed in cases at two associations; 6.4 cents per dozen for consumer-graded eggs packed in cases at 16 associations; and 7.7 cents per dozen for consumer-graded eggs cartoned and packed in cases at seven associations.

Labor costs, direct and indirect, constituted 44 percent of the total cost. Materials were next with 33 percent. Truck and other costs, mostly indirect, made up the remaining 23 percent.

Other egg-handling organizations, both cooperative and others, can compare the cost information presented in this report with their own costs. Before doing this, however, a similar analysis of operations should be made either by or for them so that the information will be comparable. It is especially important that the division and scope of operations be the same and that they use the same cost methods and analysis. In this way, costs and factors affecting costs can be determined and explained, then valid comparisons made with the information given in this report. This should assist operators in taking progressive and remedial action to increase egg-handling efficiency and to decrease costs in operations in which costs appear to be out of line.

COSTS OF HANDLING EGGS BY SELECTED COOPERATIVES IN THE NORTH CENTRAL STATES

(Preliminary Report)

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Although the producer of eggs obtains a larger part of the consumer price than the producer of almost any other important food--chiefly because there is little or no processing of eggs--still there is a wide area in which marketing costs can be reduced. In 1951, 27 percent of the consumer's egg dollar went for marketing and 73 percent for producing.¹

That the egg-handling costs of some marketing agencies are too high and are reducible is indicated by the wide variations in costs among such agencies. Some have costs which appear unduly high; others have costs which are relatively low. The low costs of some agencies may serve as goals for those having high costs.

Cooperatives are interested in increasing their efficiency in egg handling and thus reducing the producer-consumer price spread. They have asked that studies be made to assist them in doing this. They realize that important savings can often be made by improving methods and techniques of processing operations in plant layout, in the proper and greater use of equipment, in office procedures, and by other methods and devices. Improvements and savings in the operations of cooperatives generally benefit both the producers directly and immediately and the consumer eventually, if not immediately.

It is toward these improvements and the resulting benefits that this study is directed.

The three major objectives of the study are: (1) to obtain information and data on the costs and labor requirements of the several functions or operations in handling eggs for the determination of averages and

¹Bureau of Agricultural Economics, U. S. Department of Agriculture.

NOTE: The authors express their appreciation to the managers and employees of the 16 associations studied for their splendid cooperation and willing assistance, and to the following members of the Cooperative Research and Service Division: George J. Waas for counsel on accounting procedure; Guy A. Peterson and Walter K. Davis for assistance with field work; the Statistical Section for statistical assistance; and Colene A. Schmitt and Rachel G. Beattie for assistance in preparing the report.

yardsticks, (2) to determine and to measure the factors affecting costs and other measures of relative efficiency, and (3) to find and to apply methods, skills, techniques, devices, and other means of increasing efficiency in individual operations and organizations, anticipating that these benefits will eventually apply to all egg-handling agencies.

To obtain the information and statistics needed, the authors made two personal visits of one-week duration each to 16 selected egg-marketing cooperatives. One visit was timed to coincide as closely as possible with a period of relatively low seasonal receipts of eggs; the second with a week of relatively high receipts. The two sample periods were used to determine the effect of seasonal volume on costs and on labor output for each cooperative. Examinations were made of the weekly receipts during recent years in order to find the most likely weeks for study in 1950-51.

This is a preliminary report of a study of 16 farmers' cooperative associations in the North Central States which covers: (1) direct costs of handling eggs by specific operations, (2) total indirect costs, (3) labor efficiency in terms of output per man-hour, (4) operating methods and plant layout and equipment, and (5) factors affecting costs. Related studies are planned to apply, test, and measure, in pilot plants and under actual field and operating conditions, the findings of this study.

This preliminary report is primarily a statistical summary of 45 cost and labor output tables covering phases one, two, and three of the above. It confines itself to comparisons of direct costs by associations and individual operations, indirect costs by associations but not by individual operations, output per man-hour of labor by associations and individual operations, and the application of the cost data.

The purpose of this initial report is to make available, prior to the completion of the full analysis of the information obtained, information which may serve as standards for cooperatives and others in making comparisons of costs and labor efficiency. It contains a minimum of causal discussion.

In later and final reports, the costs, cost variations, and factors affecting costs will be analyzed in order to determine, measure, and show how operating methods, plant layout, use of equipment, and other factors directly affect efficiency and thereby costs in egg-handling plants.

Beyond this, further work is planned to apply, measure, interpret, and improve upon the findings under actual field and operating conditions.

PLAN AND PROCEDURE OF STUDY

ORGANIZATIONS SELECTED

Sixteen of the more representative among the larger, more efficient cooperatives handling eggs in the North Central States were chosen for analysis. It was believed that sufficiently large variations in costs and efficiency would be found even among this relatively small number of

more efficient associations to demonstrate positively instead of negatively the factors contributing to efficient operations.

These associations were selected because they were: (1) doing an outstanding job in their areas, (2) typical of certain rather distinct types of egg-handling cooperatives, (3) engaged in either candling, cartoning, or inspecting a large portion of eggs received, (4) handling relatively large volumes compared with other associations in their areas, and (5) were willing to cooperate in a detailed cost study.

Location, Type, Products Handled, and Size

The selection of the associations was based also on location, type, products handled, and size.

The associations were picked from seven States: Four each in Ohio and Minnesota; two each in Iowa, Kansas and Nebraska; one each in Michigan and South Dakota.

They were chosen by type in order to include cooperatives handling other farm products than eggs alone. This was done to discover whether a diversity of products would affect the costs and efficiency of handling eggs. Eight of the associations included are creameries. One association is engaged chiefly in handling farm supplies. The other seven associations are specialized egg and poultry cooperatives and handle egg and poultry chiefly or exclusively. Of these seven, four handle eggs only and three handle both eggs and poultry.

Each association has been given a code letter since the information and data were obtained on a confidential basis with the names or addresses of the cooperating associations not to be divulged.

The 16 cooperatives received a total of 923,808 cases of eggs, or an average of 57,738 cases per association, during their individual fiscal years ending in 1950. The lowest volume was 19,300 cases and the highest 140,600. Total business, including sales of other products as well as eggs, ranged from \$560,000 to \$4,700,000, averaging \$1,465,071. Sales of eggs ranged from 23 to 100 percent of the total business, and averaged 50 percent.

The volumes of eggs received and gross value of all sales of the 16 associations, by groups, according to products handled, for the fiscal years ending in 1950, were as follows:

Associations handling chiefly	Number of associations	Cases of eggs received	Value of all sales
Butter-----	8	288,363	\$10,941,744
Eggs-----	4	363,229	4,504,084
Eggs and poultry----	3	155,434	3,292,137
Farm supplies-----	1	116,782	4,703,175
Total-----	16	923,808	\$23,441,140
Average-----		57,738	1,465,071

PERIOD OF STUDY

Because of limitations of time and personnel, it was decided to collect information and statistics for the study over a short time span on a relatively large number of associations, rather than cover a few associations more intensively over a longer period. And, inasmuch as volume may affect costs and case output per man-hour, the "high receipts week" and the "low receipts week" were decided upon as the best means to indicate contrasts as well as comparisons.

An attempt was made to visit each association during the exact weeks of lowest and highest receipts. Obviously this was not possible since the low and high weeks could be determined only after the year's total receipts were in. The figures given in table 1 show the relationship of

Table 1. - *Relationship of egg receipts during two selected weeks to the average weekly receipts for the year, 16 North Central associations, 1950-51*

Association	Receipts for 12-month period ¹		Receipts for each week of study		Percentage of weekly average for year	
	Total	Weekly average	Low period week	High period week	Low period week	High period week
	Cases				Percent	
A-----	68,622	1,320	876	1,829	66	139
B-----	45,920	881	514	1,300	58	148
C-----	58,500	1,122	618	1,632	55	145
D-----	78,922	1,514	1,384	1,577	91	104
E-----	32,124	616	370	789	60	128
F-----	116,782	2,240	1,868	2,876	83	128
G-----	36,680	703	572	977	81	139
H-----	42,781	821	614	1,010	75	123
I-----	28,099	539	445	755	83	140
J ² -----	20,451	393	372	463	95	118
K-----	24,282	466	456	599	98	129
L-----	32,627	626	446	937	71	150
M-----	160,035	3,078	2,386	3,976	78	129
N-----	46,897	902	758	1,060	84	118
O-----	122,691	2,359	1,980	2,670	84	113
P-----	49,869	959	875	1,060	91	111
Average-----	60,330	1,159	908	1,469	78	129
Range:						
Low-----	20,451	393	370	463	55	104
High-----	160,035	3,078	2,386	3,976	98	150

¹The 12 months selected embraced the 52 weeks ending with the last day of the second week of study.

²Figures do not include eggs handled for other associations.

the volume for each of the two weeks studied to that of the weekly average for the year. The average of the 16 associations' receipts during the low receipts week was 78 percent of the yearly average, and 129 percent during the high receipts week.

Throughout the report, averages for each association are given in the tables. These are the averages for the two weeks of visitation and not weekly averages for the 52 weeks of the calendar or fiscal year.

COMPARATIVE BASIS

Since it is meaningless to compare general operating costs among cooperatives of different types or among those not performing the same services -- or performing them in different proportions -- it is necessary to break down costs and labor output by individual operations, services, functions, or jobs and to have the constituting elements as similar in number and scope as possible. For example, as shown in table 2,

Table 2. - *Direct labor cost of handling eggs and egg volume, by operations, 2 North Central associations, 1-week period of high receipts, 1950-51*

Operation	Direct labor cost		Handled in each operation			
	Cents per case		Cases		Percent of total eggs received	
	Associ- ation F	Associ- ation M	Associ- ation F	Associ- ation M	Associ- ation F	Associ- ation M
Collecting----	-	14.7	-	¹ 2,386	0	60
Receiving-----	2.0	2.4	2,876	3,976	100	100
Inspecting----	-	6.5	-	3,548	0	89
Egg breaking--	70.0	-	44	-	2	0
Candling-----	41.6	40.5	452	810	16	20
Cartoning-----	47.9	21.1	1,915	219	67	6
Packing-----	1.8	3.1	1,915	219	67	6
Coopering-----	3.8	4.1	2,876	1,870	100	47
Stacking and holding-----	1.7	4.2	2,367	3,947	82	99
Loading out---	2.1	1.1	2,346	4,019	82	² 101
Delivering----	5.5	7.1	1,527	222	53	6

¹Volume collected by association and contract truckers. See also table 44.

²Exceeds 100 percent because some eggs were on hand at beginning of week.

Associations F and M performed nearly the same number of services or operations, but the proportion of egg receipts varied widely for each of the following services:

Operation	Percentage of egg receipts serviced	
	Association F	Association M
Collecting-----	0	60
Inspecting-----	0	89
Candling-----	16	20
Cartoning-----	67	6
Packing-----	67	6
Coopering-----	100	47
Delivering-----	53	6

A further illustration of the definite relationship between the per-unit cost of operating and the number and type of services rendered is found in a study published in 1939 on non-auction types of cooperative associations in the 13 Northeastern States.² The results of this study showed that the handling charge to the producer (roughly equal to costs) ranged from zero at one bargaining-type association to \$1.50 per case of eggs at one pool-type association. In the same report, the operating cost of two pool-type associations was reflected in the amount of candling and cartoning done. One of these associations, cartoning from 60 to 90 percent of its receipts and candling only the balance, had operating costs of \$1.10 per case of eggs received. The other association, selling a portion of its receipts, not fully candled, during the surplus seasons and cartoning only 5 percent of its eggs, had a cost of 70 cents per case of eggs received. The difference in the two cost figures is closely related to the proportion and type of services rendered.

Functions Covered

In order to compare the functional costs between any two or more organizations, all activities must be classified for each cooperative. Furthermore, it is essential that each function be sufficiently definite and set forth in detail so that the work performed in any function will be the same for all associations analyzed or compared -- although minor differences may still exist. This relative sameness of function facilitates comparison. It does not, however, explain the causes for cost variations. It merely narrows the operation down so that the number of variables is reduced and the operations under comparison have as much sameness as practicable for the purpose of the study.

²Scanlan, John J. and Lennartson, Roy W., Preliminary report on study of Non-Auction Cooperative Associations Marketing Eggs and Poultry in the 13 Northeastern States, Farm Credit Administration, mimeograph, August 31, 1939.

In this study, the handling of eggs through the cooperative plants was broken down into as many as 13 separate and distinct plant operations. These are: collecting, receiving, inspecting, shell cleaning, shell treating, egg breaking, candling, cartoning, packing, coopering, stacking and holding, loading out, and delivering.³ Obviously, not all associations engaged in all these plant operations.

In order to make the costs and labor outputs as comparable as possible among the 16 associations studied, it was necessary to determine precisely where each operation started and ended. In the case of labor, this was done by including in each operation the pertinent labor elements as listed below.

Labor elements included in each operation:

- | | |
|--|---|
| <p>1. <u>Collecting (hauling to plant; truck personnel only):</u>
 Loading truck with empty cases
 Driving truck
 Loading truck at farms
 Making out producer and route records
 Unloading or helping unload</p> | <p>4. <u>Shell treating:</u>
 Preparing oil
 Readyng empty cases & equipment
 Moving cases to machine
 Opening cases
 Putting eggs in machine
 Removing eggs from machine
 Placing treated eggs in cases
 Labeling, marking, etc.
 Removing cases</p> |
| <p>2. <u>Receiving (plant labor):</u>
 Unloading or helping hauler unload
 Moving eggs into plant
 Sorting cases
 Recording receipts
 Weighing in cases
 Stacking or disposing of unloaded cases
 Loading empty cases</p> | <p>5. <u>Egg cleaning:</u>
 Hauling to cleaner
 Buffing operations
 Washing operations
 Removal from cleaning operations</p> |
| <p>3. <u>Inspecting (wholesale grading):</u>
 Moving eggs to inspectors
 Removing case covers
 Candling desired sample
 Returning eggs to case
 Replacing case covers
 Weighing before or after inspecting
 Removal of inspected cases
 Recording and marking inspection results</p> | <p>6. <u>Egg breaking:</u>
 Hauling to breaking room
 Breaking operation
 Operation of mixer, pump, etc.
 Filling and covering cans
 Putting cans in refrigerator
 Making out breaking records
 Cleaning equipment and room
 Repair and maintenance of equipment</p> |

³Sizing is also an operation but since it is done in conjunction with candling and cartoning, it is not possible to determine its cost accurately as a distinct operation.

7. Candling (loose to case):¹
 - Moving eggs to candlers
 - Removing case covers
 - Obtaining and readying empty cases
 - Taking eggs off sizing machine
 - Candling operation
 - Putting eggs in cases
 - Recording candling results
 - Replacing case covers
 - Removing cases
 - Weighing after candling
 - Stamping candled case
8. Cartoning (candling to cartons):¹
 - Moving eggs to candlers
 - Removing case covers
 - Obtaining and setting up cartons
 - Taking eggs off sizing machine
 - Candling operation
 - Putting eggs in cartons
 - Closing cartons
 - Recording candling results
 - Marking, sealing, and labeling cartons
 - Removing cartoned cases
9. Packing (cartoned eggs):
 - Stamping, labeling, or marking cartoned cases
 - Sealing cartoned cases
 - Obtaining and readying empty cases
 - Inserting flats
 - Putting cartons in case
 - Closing cases
 - Stacking packed cases for removal to holding place
10. Coopering (including storing empty cases):
 - Obtaining shook or used cases
 - Making or setting up new cases
 - Repairing used cases
 - Putting flats and fillers in cases
 - Putting labels on cases during coopering
 - Removing coopered cases
 - Stacking coopered cases
11. Stacking and holding (in plant):
 - Stacking (when several high and separate from candler removal)
 - Moving cases to holding place
 - Sorting cases
 - Restacking cases
 - Weighing and labeling cases
12. Loading out:
 - Hauling to trucks or railroad cars
 - Helping to load
 - Making out shipping records, bills of lading and delivery instructions
13. Delivering (hauling to buyers; truck personnel only):
 - Loading truck
 - Driving truck
 - Unloading eggs
 - Making records of collections

¹Per unit labor cost for candling and for cartoning is based upon the actual case output rather than case input. For example, if 100 cases of which 15 percent were rejects, went to the cartoning operation the cost and volumes were allocated based on 85 cases cartoned and 15 cases candled. In some plants all eggs were candled and packed loose in cases. Later a portion of the candled eggs were transferred into cartons. In these instances cartoning cost was determined by allocating the proportionate share of the total candling cost to cartoning based upon output and then adding the transfer and other pertinent costs.

COLLECTION OF DATA

During each of the two 1-week periods, information was collected concerning (1) direct costs, (2) indirect costs, and (3) other information.

Direct Costs

These data collected under "direct costs" included all facts and figures pertaining to direct labor, packing and processing materials, truck operating and contract hauling, and other direct costs.

As used in this report, direct costs are costs incurred for a single operation or part of an operation and which, therefore, are separable and can be traced directly to that operation or to one or more of its constituent elements. Direct costs are variable. They vary in total amount as the product volume increases or decreases, but on a per unit basis they are not affected, or are affected less than indirect costs, by changes in volume.

Costs for direct labor included wages and salaries for regular and overtime work and additional costs associated therewith, such as Federal old age benefits, unemployment insurance, workmen's compensation insurance, bonuses, pensions, and hospital insurance. After the labor cost for each employee was determined, his time and wages were charged to the operation in which he worked. When he worked on more than one operation, his wages were distributed among operations on a time basis.

All costs incurred for packing materials were determined according to the types of egg packs used. These are: (1) 30-dozen loose or case pack, (2) 30-dozen or equivalent cartoned pack, and (3) liquid egg pack.

The most important materials were case shells, flats and fillers, case labels, gummed tape, case tags, cartons, carton seals, and cans, lids, and parchment paper for liquid eggs. In instances where both new and used materials were employed, it was necessary to determine the proportion of each in order to calculate the actual unit cost.

All costs for operating association trucks and the charges for contract trucking were collected. Some cooperative association trucks collected both eggs and cream on the same trip. This made it necessary to allocate to eggs their proportionate share of the expenses, both truck operating and direct labor. Truck operating was charged to the egg collecting operation in the ratio of weight of eggs to the combined weight of eggs and cream hauled, and direct labor in the ratio of the number of cases of eggs to the combined cases of eggs and cans of cream collected. A 30-dozen case of eggs was considered equal in cost and labor requirement to a 10-gallon can of cream.

Other direct costs incurred were service fees for Federal inspection and grading, plus royalties on machines for setting up and closing cartons.

Indirect or Overhead Costs

Indirect costs refer to those costs which are incurred for more than one operation or for parts of more than one operation. They are, therefore, not readily separable and cannot be traced directly to an individual operation or to its constituent elements. Most indirect costs are fixed costs and do not change in total amount when the volume of product

changes but which, on a per-unit basis, decrease when the volume increases and increase when volume is less.

In collecting data on these costs, they were divided into two general categories: (1) indirect labor and (2) indirect costs for other than indirect labor.

Indirect labor costs, which include the salaries or wages of the manager, office help, salesmen, fieldmen, janitors, night watchmen, repair and maintenance employees, and plant foremen, were determined for the specific weeks under study. As such, they represent costs for current operations the same as direct labor. When the work of some employees was both direct and indirect, their labor costs were divided accordingly.

Indirect expenses, other than indirect labor costs, were obtained from the audit report for the latest fiscal year for each association. These annual data were then calculated on a weekly basis for comparison with the other costs, and the weekly average applied to current operations. In other words, indirect cost figures, excluding indirect labor, represent costs for 1/52 of the fiscal year preceding the week of study. This method was used inasmuch as indirect cost information was not currently available for the weeks of study. Also, annual indirect costs, especially in total, were found to vary little from year to year for any individual association. They are, therefore, considered sufficiently accurate and reliable for this analysis.

Indirect costs on a per-unit basis were determined by dividing the average weekly indirect costs by the number of cases of eggs received during each week of study. In this study, these costs were not apportioned to individual operations as were direct costs. It should be stressed again that a comparison of these per-unit indirect costs among plants have little meaning because the number of services rendered and the relative volume of eggs handled in each operation vary widely.

Indirect costs, other than labor, include the following expense items:

Plant:

- Heat
- Light, power, and water
- General insurance
- Real estate and personal property taxes
- Maintenance and repair
- Plant supplies (general)
- Depreciation:
 - Buildings
 - Plant equipment
- Miscellaneous

Non-plant:

- Office supplies, stationery, and printing
- Postage
- Telephone and telegraph
- Advertising
- Bad debts
- Interest
- Bank service
- Auditing and legal
- Travel
- Automobile
- Directors' expense
- Annual meeting expense
- Educational expense
- Dues and subscriptions
- Contributions and donations
- Depreciation:
 - Furniture and fixtures
 - Automobile
- Miscellaneous

In instances where marketing associations handle farm supplies or other farm products than eggs, it is necessary to allocate the proper portion of each indirect expense item to the egg department. The records of some associations provided allocations to the egg department. But even in such cases, modifications were sometimes necessary in order to treat individual expense allocations uniformly for all associations. For example, most of the indirect non-plant expenses listed above are allocated to the egg department, according to the ratio of egg sales to total association sales. Indirect plant expenses are charged on an actual cost basis insofar as possible. This allocation was usually based upon the amount of floor space used for handling eggs or for such costs as depreciation, upon the actual cost of the buildings and equipment used for the egg operations.

Other Information

Facts other than cost data were obtained during each week of study and will be used primarily in the phases 4 and 5 of this study.⁴ These will help explain costs, factors affecting costs, and labor efficiency. For the most part, this information includes labor rates for regular and overtime work, amount of overtime, quality of eggs candled and cartoned, grading standards used, number and type of jobs performed by candlers, percentage of eggs sized on farms before reaching the plant, types of plant equipment used, plant and equipment layout, flow of eggs through the plant, volume of eggs handled in relation to capacity, length of farm routes, and frequency of farm pick-ups.

COSTS

Cost information in this report covers (1) the aggregate direct and indirect costs of 16 associations, (2) direct unit costs of handling eggs by individual associations and operations, (3) indirect unit costs by associations, and (4) a discussion of the application of the cost data.

Data on necessary operating margins or mark-ups on proceeds from sale of eggs or on prices or payments to producers are not included in this study. Nor are necessary selling prices or the determination of unit payments to producers objectives of this study.

AGGREGATE COSTS

The aggregate cost of handling eggs through the 16 plants for the week of low receipts was \$26,057 and \$36,387 for the week of high receipts (table 3). For the low receipts week, direct costs constituted an average of 79.2 percent of the total; indirect costs, 20.8 percent. For the high receipts week, these percentages were 83.5 and 16.5 respectively.

⁴See page 2 for phases of study.

Table 3. - Aggregate direct and indirect costs and percentages for handling eggs at 16 North Central associations, two 1-week periods, 1950-51

Item	Amount			Percentage		
	Low receipts week	High receipts week	Average	Low receipts week	High receipts week	Average
				Percent		
Direct costs:						
Labor-----	\$8,547.49	\$12,483.79	\$10,515.64	32.8	34.3	33.7
Packing materials ¹ -----	7,618.53	13,120.91	10,369.72	29.2	36.1	33.2
Truck ² -----	4,354.55	4,629.32	4,491.94	16.7	12.7	14.4
Other ³ -----	122.76	152.50	137.63	.5	.4	.4
Total-----	20,643.33	30,386.52	25,514.93	79.2	83.5	81.7
Indirect costs:						
Labor-----	2,953.47	3,508.32	3,230.89	11.3	9.7	10.4
Other than labor-----	2,459.72	2,491.72	2,475.72	9.5	6.8	7.9
Total-----	5,413.19	6,000.04	5,706.61	20.8	16.5	18.3
Grand total----	\$26,056.52	\$36,386.56	\$31,221.54	100.0	100.0	100.0

¹Packing materials for loose, cartoned, and liquid eggs, and processing oil.

²Includes operating expenses of association trucks and charges for contract trucking and freight shipments for collecting and delivering eggs. See also tables 44 and 45.

³Includes Federal inspection fees and royalty for cartoning equipment.

Total labor cost, both direct and indirect, accounted for 44 percent of the aggregate cost. Packing material was the next most important single cost item, accounting for about one-third of the total cost in each weekly period. Truck costs constituted an average of 14 percent for the two periods. The remaining 9 percent was made up of miscellaneous small direct items and of the indirect costs exclusive of indirect labor (table 3).

Total costs on a per-unit basis are discussed under "Application of Cost Data," page 28.

DIRECT COSTS

Direct costs are shown in this report on a case-unit basis for (1) direct labor by individual plant operations, (2) packing materials by type of pack, (3) truck, and (4) other direct costs by operations. The cost groups are discussed in this order below.

Labor Costs by Plant Operations

During the low receipts week, direct labor costs by operations ranged from 1.4 cents per case for loading out eggs to 64.4 cents for egg breaking (table 4). For the high receipts week, the range was 1 to 70 cents for the same operations.

Table 4. - Summary of average direct labor cost of handling eggs and egg volume by operations, by specified number of North Central associations, two 1-week periods, 1950-51

Operation	Associations performing operation		Direct labor cost ¹			Eggs handled		
	Low receipts week	High receipts week	Low receipts week	High receipts week	Average ²	Low receipts week	High receipts week	Average
	<i>Number</i>		<i>Cents per case</i>			<i>Cases</i>		
Collecting-----	9	9	27.6	18.9	23.2	5,855	9,529	7,692
Receiving-----	16	16	2.5	1.6	2.1	14,578	23,738	19,158
Inspecting-----	2	2	4.3	6.5	5.4	2,394	4,749	3,572
Shell treating-----	9	9	7.1	7.2	7.2	3,338	6,260	4,799
Shell cleaning-----	2	3	24.4	26.9	23.4	196	836	516
Egg breaking-----	1	1	64.4	70.0	67.2	117	44	81
Candling-----	16	16	40.3	38.5	39.4	9,863	14,182	12,023
Cartoning-----	5	7	43.6	46.6	45.1	1,947	4,014	2,981
Packing-----	5	7	6.3	3.9	5.0	1,947	4,014	2,981
Coopering-----	14	16	4.7	4.7	4.7	11,063	19,897	15,480
Stacking and holding-----	16	16	2.3	2.2	2.3	14,683	22,851	18,767
Loading out-----	16	16	1.4	1.0	1.2	15,012	23,860	19,436
Delivering-----	3	5	10.5	9.3	10.3	3,599	4,974	4,287

¹Figures taken from tables 5 through 17.

²Unweighted average. See also footnote 1.

Unit costs for labor were relatively high for collecting, shell cleaning, egg breaking, candling, and cartonning. For example, during the low receipts week the costs of these operations, on an individual operation basis, ranged from 24.4 to 64.4 cents, whereas, costs for such lower cost operations as receiving, stacking and holding, and delivering ranged from only 1.4 to 10.5 cents.

The figures in table 4 show in summary form the number of cooperatives performing each operation or service, the direct labor costs per case, and the total volume of eggs concerned. These data are summarized here from supplementary tables 5 through 17, where they are shown separately for each operation and by individual cooperatives. Each supplementary table gives the average cost, range in costs (high and low), and the volume of eggs concerned in the operation.

On a functional basis, the following 13 tables give cost figures on direct labor by operations as they occur, from the collection of eggs at the farm to the delivery of eggs to the buyer. A more complete breakdown of collecting and delivering costs is given later in tables 44 and 45. On these two tables costs (direct labor, truck operating, and total) are shown by plants for association trucks, contract hauling, and the grand total costs. A separate, more complete report on the costs of collecting eggs will be issued later.

Table 5. - *Collecting eggs from farms: Direct labor cost and volume of eggs collected, 11 North Central associations, two 1-week periods, 1950-51*¹

Associations performing operation	Collecting cost			Cases collected		
	Low receipts week	High receipts week	Average ²	Low receipts week	High receipts week	Average
	<i>Cents per case</i>			<i>Cases</i>		
A-----	30.0	20.1	25.1	836	1,804	1,320
B-----	33.7	(3)	-	446	(3)	-
C-----	33.9	17.6	25.8	234	458	346
D-----	11.2	9.7	10.5	858	1,329	1,094
G-----	16.1	12.3	14.2	452	704	578
H ³ -----	-	-	-	-	-	-
K-----	17.7	30.4	24.1	107	126	117
L-----	62.1	30.6	46.4	402	843	623
M-----	-	14.7	-	-	878	-
N-----	27.7	17.1	22.4	659	945	802
O-----	15.6	17.8	16.7	1,861	2,442	2,152
P ⁴ -----	19.7	18.0	18.9	63	75	69
Average ⁵ -----	27.6	18.9	23.2	651	1,059	879
Range: ⁶						
Low-----	11.2	9.7	10.5	107	126	117
High-----	62.1	30.6	46.4	1,861	2,442	2,152

¹Does not include contract hauling. See also table 44.

²Unweighted average.

³Data not available.

⁴Not included in average or range because of small volume collected.

⁵Unweighted average of vertical column excluding association P.

⁶The range, when given in tables throughout the report, represent the lowest and highest figure of the vertical columns including the average columns.

Table 6. - *Receiving eggs: Direct labor cost and volume of eggs received, 16 North Central associations, two 1-week periods, 1950-51*

Associations performing operation	Receiving cost			Eggs received		
	Low receipts week	High receipts week	Average ¹	Low receipts week	High receipts week	Average
	<i>Cents per case</i>			<i>Cases</i>		
A-----	2.5	1.6	2.1	876	1,829	1,353
B-----	5.9	1.4	3.6	514	1,300	907
C-----	.8	1.0	.9	618	1,632	1,125
D-----	1.7	.7	1.2	1,384	1,577	1,480
E-----	5.8	.6	3.2	370	789	580
F-----	2.5	2.0	2.3	1,868	2,876	2,372
G-----	3.0	1.3	2.1	572	977	774
H-----	2.9	2.4	2.7	614	1,010	812
I-----	3.2	3.8	3.5	445	755	600
J-----	.9	.3	.6	416	691	554
K-----	2.0	4.8	3.4	456	599	527
L-----	2.1	1.3	1.7	446	937	692
M-----	1.8	2.4	2.1	2,386	3,976	3,181
N-----	1.5	1.1	1.3	758	1,060	909
O-----	1.0	.7	.8	1,980	2,670	2,325
P-----	2.7	.1	1.4	875	1,060	967
Average ¹ ----	2.5	1.6	2.1	911	1,484	1,197
Range:						
Low-----	.8	.1	.6	370	599	527
High-----	5.9	4.8	3.6	2,386	3,976	3,181

¹Unweighted average.

Table 7. - *Inspecting eggs: Direct labor cost and volume of eggs inspected, 3 North Central associations, two 1-week periods, 1950-51*

Associations performing operation	Inspecting cost			Eggs inspected		
	Low receipts week	High receipts week	Average ¹	Low receipts week	High receipts week	Average
	<i>Cents per case</i>			<i>Cases</i>		
J ² -----	10.0	2.0	6.0	44	228	136
M-----	3.8	6.5	5.2	1,640	3,548	2,594
O-----	4.8	6.4	5.6	754	1,201	978
Average ³ ----	4.3	6.5	5.4	1,197	2,375	1,786
Range:						
Low-----	3.8	6.4	5.2	754	1,201	978
High-----	4.8	6.5	5.6	1,640	3,548	2,594

¹Unweighted average.

²Not included in average or range because these figures represent inspection of candled eggs received from stations.

³Unweighted average of associations M and O.

Table 8. - *Shell treating eggs: Direct labor cost and volume of eggs shell treated, 11 North Central associations, two 1-week periods, 1950-51*

Associations performing operation	Shell treating cost			Eggs shell treated		
	Low receipts week	High receipts week	Average ¹	Low receipts week	High receipts week	Average
	<i>Cents per case</i>			<i>Cases</i>		
A-----	4.9	-	-	235	-	-
E-----	5.8	5.2	5.5	300	740	520
C-----	8.9	6.1	7.5	207	675	441
D-----	4.7	6.4	5.6	783	1,050	917
E-----	-	9.3	-	-	200	-
G-----	7.5	5.1	6.3	284	928	606
H-----	6.7	7.1	6.9	497	898	697
J-----	8.5	11.3	9.9	375	601	488
K-----	6.8	7.4	7.1	373	491	432
L-----	9.8	7.1	8.4	284	677	481
P ² -----	-	13.2	-	-	60	-
Average ³ ----	7.1	7.2	7.2	371	696	573
Range:						
Low-----	4.7	5.1	5.5	207	200	432
High-----	9.8	11.3	9.9	783	1,050	917

¹Unweighted average.

²Not included in average or range because of small volume shell treated.

³Unweighted average of vertical column excluding association P.

Table 9. - *Shell cleaning eggs: Direct labor cost and volume of eggs cleaned, 3 North Central associations, two 1-week periods, 1950-51*

Associations performing operation	Shell cleaning cost			Eggs cleaned		
	Low receipts week	High receipts week	Average ¹	Low receipts week	High receipts week	Average
	<i>Cents per case</i>			<i>Cases</i>		
A-----	19.0	10.1	14.6	76	218	147
G-----	-	36.0	-	-	160	-
K-----	29.9	34.5	32.2	120	458	294
Average ² ----	24.4	26.9	23.4	98	279	221
Range:						
Low-----	19.0	10.1	14.6	76	160	147
High-----	29.9	36.0	32.2	120	458	294

¹Unweighted average.

²Unweighted average of vertical column.

Table 10. - *Egg breaking: Direct labor cost and volume of eggs broken, 1 North Central association, two 1-week periods, 1950-51*

Association performing operation	Egg breaking cost			Egg breaking volume		
	Low receipts week	High receipts week	Average ¹	Low receipts week	High receipts week	Average
	<i>Cents per case</i>			<i>Cases</i>		
F-----	64.4	70.0	67.2	117	44	81

¹Unweighted average.

Table 11. - *Candling eggs: Direct labor cost and volume of eggs candled, 16 North Central associations, two 1-week periods, 1950-51*

Associations performing operation	Candling cost			Eggs candled		
	Low receipts week	High receipts week	Average ¹	Low receipts week	High receipts week	Average
	<i>Cents per case</i>			<i>Cases</i>		
A-----	46.3	37.8	42.1	810	935	873
B-----	40.8	29.0	34.9	469	1,300	884
C-----	41.5	34.3	37.9	542	1,175	859
D-----	32.9	27.2	30.0	1,384	1,577	1,480
E-----	49.2	34.6	41.9	370	749	560
F-----	43.4	41.6	42.5	801	452	626
G-----	38.9	48.4	43.6	572	977	775
H-----	46.0	43.6	44.8	543	1,010	776
I-----	29.6	27.4	28.5	457	755	606
J-----	43.0	51.9	47.5	372	480	426
K-----	28.0	24.9	26.4	468	610	539
L-----	59.2	48.4	53.8	370	911	641
M-----	36.2	40.5	38.4	645	810	727
N-----	46.1	57.0	51.5	360	632	496
O-----	31.7	32.8	32.3	1,069	1,139	1,104
P-----	32.1	36.5	34.3	631	670	651
Average ¹ ----	40.3	38.5	39.4	616	886	751
Range:						
Low-----	28.0	24.9	26.4	360	452	426
High-----	59.2	57.0	53.8	1,384	1,577	1,480

¹Unweighted average.

Table 12. - *Cartoning eggs: Direct labor cost and volume of eggs cartoned, 7 North Central associations, two 1-week periods, 1950-51*

Associations performing operation	Cartoning cost			Eggs cartoned		
	Low receipts week	High receipts week	Average ¹	Low receipts week	High receipts week	Average
	<i>Cents per case</i>			<i>Cases</i>		
A-----	-	47.1	-	-	894	-
E-----	-	46.4	-	-	40	-
F-----	50.8	47.9	49.4	1,047	1,915	1,481
M-----	16.0	21.1	18.5	101	219	160
N-----	51.9	61.3	56.6	398	222	310
O-----	47.9	55.1	51.5	157	364	261
P-----	51.5	47.1	49.3	244	360	302
Average ² -----	43.6	46.6	45.1	389	573	503
Range:						
Low-----	16.0	21.1	18.5	101	40	160
High-----	51.9	61.3	56.6	1,047	1,915	1,481

¹Unweighted average.

²Unweighted average of vertical column.

Table 13. - *Packing cartoned eggs: Direct labor cost and volume of cartoned eggs packed, 7 North Central associations, two 1-week periods, 1950-51*

Associations performing operation	Packing cost			Eggs packed		
	Low receipts week	High receipts week	Average ¹	Low receipts week	High receipts week	Average
	<i>Cents per case</i>			<i>Cases</i>		
A-----	-	5.8	-	-	894	-
E-----	-	2.5	-	-	40	-
F-----	2.9	1.8	2.4	1,047	1,915	1,481
M-----	4.8	3.1	3.9	101	219	160
N-----	3.8	3.0	3.4	398	222	310
O-----	² 17.0	8.7	² 12.9	157	364	261
P-----	2.8	2.3	2.5	244	360	302
Average ³ -----	6.3	3.9	5.0	389	573	503
Range:						
Low-----	2.8	1.8	2.4	101	40	160
High-----	17.0	8.7	12.9	1,047	1,915	1,481

¹Unweighted average.

²Includes sealing cartons by hand during low receipts week.

³Unweighted average of vertical column.

Table 14. - *Coopering egg cases: Direct labor cost and volume of egg cases coopered, 16 North Central associations, two 1-week periods, 1950-51*

Associations performing operation	Coopering cost			Egg cases coopered		
	Low receipts week	High receipts week	Average ¹	Low receipts week	High receipts week	Average
	<i>Cents per case</i>			<i>Cases</i>		
A-----	4.9	6.1	5.5	876	2,311	1,594
B-----	7.2	2.7	5.0	514	1,300	907
C-----	4.0	2.8	3.4	618	1,632	1,125
D-----	(2)	4.6	-	(2)	1,577	-
E-----	4.6	4.2	4.4	1,220	789	1,005
F-----	5.2	3.8	4.5	1,868	2,876	2,372
G-----	5.1	5.8	5.4	500	925	712
H-----	5.0	7.6	6.3	644	898	771
I-----	2.3	3.6	3.0	534	57	296
J-----	3.4	4.2	3.8	416	601	508
K-----	2.8	6.5	4.6	378	61	219
L-----	7.3	4.6	6.0	370	843	607
M-----	(2)	4.1	-	(2)	1,870	-
N-----	6.5	8.7	7.6	270	427	348
O-----	4.0	3.1	3.5	1,980	2,670	2,325
P-----	3.6	3.3	3.5	875	1,060	967
Average ³ -----	4.7	4.7	4.7	790	1,244	983
Range:						
Low-----	2.3	2.7	3.0	270	57	219
High-----	7.3	8.7	7.6	1,980	2,876	2,372

¹Unweighted average.

²Data not obtained.

³Unweighted average of vertical column.

Table 15. - *Stacking eggs in holding rooms: Direct labor cost and volume of eggs stacked, 16 North Central associations, two 1-week periods, 1950-51*

Associations performing operation	Stacking cost			Eggs stacked		
	Low receipts week	High receipts week	Average ¹	Low receipts week	High receipts week	Average
	<i>Cents per case</i>			<i>Cases</i>		
A-----	.3	.9	.6	871	1,829	1,350
B-----	1.6	.5	1.1	514	1,300	907
C-----	2.6	.8	1.7	618	1,632	1,125
D-----	1.4	2.2	1.8	1,384	1,577	1,481
E-----	4.3	.9	2.6	370	789	579
F-----	1.4	1.7	1.5	1,848	2,367	2,108
G-----	.9	1.8	1.4	572	977	774
H-----	1.3	1.9	1.6	614	1,010	812
I-----	.6	1.6	1.1	534	755	645
J-----	2.2	.9	1.5	416	691	553
K-----	1.5	.9	1.2	498	610	554
L-----	5.5	8.0	6.8	446	937	692
M-----	4.2	4.2	4.2	2,386	3,947	3,166
N-----	5.4	3.7	4.5	757	1,060	909
O-----	1.8	2.1	2.0	1,980	2,310	2,145
P-----	2.5	2.8	2.6	875	1,060	967
Average ¹ -----	2.3	2.2	2.3	918	1,428	1,173
Range:						
Low-----	.3	.5	.6	370	610	553
High-----	5.5	8.0	6.8	2,386	3,947	3,166

¹Unweighted average.

Table 16. - *Loading out eggs: Direct labor cost and volume of loading out eggs, 16 North Central associations, two 1-week periods, 1950-51*

Associations performing operation	Loading out cost			Eggs loaded out		
	Low receipts week	High receipts week	Average ¹	Low receipts week	High receipts week	Average
	<i>Cents per case</i>			<i>Cases</i>		
A-----	.6	1.4	1.0	871	2,115	1,493
B-----	1.2	.2	.7	514	1,300	907
C-----	2.5	1.4	2.0	824	1,632	1,228
D-----	1.2	.9	1.0	1,415	1,972	1,694
E-----	2.5	.5	1.5	416	789	602
F-----	1.6	2.1	1.9	1,645	2,346	1,996
G-----	.8	.7	.7	627	326	476
H-----	1.5	.8	1.2	604	1,741	1,173
I-----	.6	.3	.4	534	972	753
J-----	2.0	2.1	2.1	416	558	487
K-----	.2	.6	.4	498	633	565
L-----	.9	1.0	.9	1,093	546	820
M-----	.7	1.1	.9	2,279	4,019	3,149
N-----	2.1	1.9	2.0	757	984	870
O-----	1.0	.6	.8	1,709	2,843	2,276
P-----	2.5	.1	1.3	810	1,084	947
Average ¹ -----	1.4	1.0	1.2	938	1,491	1,215
Range:						
Low-----	.2	.1	.4	416	326	476
High-----	2.5	2.1	2.1	2,279	4,019	3,149

¹Unweighted average.

Table 17. - *Delivering eggs to buyers: Direct labor cost and volume of eggs delivered to buyers, 6 North Central associations, two 1-week periods, 1950-51*¹

Associations performing operation	Delivering cost			Eggs delivered		
	Low receipts week	High receipts week	Average ²	Low receipts week	High receipts week	Average
	<i>Cents per case</i>			<i>Cases</i>		
C-----	12.5	17.3	14.9	824	615	720
F-----	6.6	5.5	6.1	1,358	1,527	1,443
M-----	-	7.1	-	-	222	-
N-----	³ 15.0	9.2	³ 12.1	³ 73	239	³ 156
O-----	12.4	7.3	9.9	1,417	2,371	1,894
P-----	-	³ 11.5	-	-	³ 81	-
Average ⁴ ----	10.5	9.3	10.3	1,200	995	1,352
Range:						
Low-----	6.6	5.5	6.1	824	222	720
High-----	12.5	17.3	14.9	1,417	2,371	1,894

¹Does not include contract hauling or freight shipments. See also table 45.

²Unweighted average.

³Not included in average or range because of small volume delivered.

⁴Unweighted average of vertical column excluding associations N and P where indicated by 3/.

Packing Materials

Total cost of materials used in packing eggs per 30-dozen case or equivalent is given in table 18. These data are for three different packs of eggs -- loose (case-packed), cartoned, and liquid. In addition, the cost of oil used in shell treating is given. To obtain the total cost of material, the cost of oil must be added to that of the container cost when the shell treating service is performed.

The cost of materials for case-packed eggs during the high receipts week averaged 55.2 cents per case and ranged from 26.0 to 79.3 cents. For cartoned eggs in cases it was 86.5 cents per 30-dozen case and ranged from 72.8 to 99.0 cents.

Table 18. - Packing materials: Total cost for loose and cartoned eggs and for oil for shell treating, 16 North Central associations, two 1-week periods, 1950-51¹

Association	Loose			Cartoned			Shell treating oil		
	Low receipts week	High receipts week	Average ²	Low receipts week	High receipts week	Average ²	Low receipts week	High receipts week	Average ²
<i>Cents per 30-dozen case or equivalent</i>									
A-----	57.4	55.3	56.4	-	84.5	-	2.9	-	-
B-----	65.8	53.6	59.7	-	-	-	1.8	.9	1.4
C-----	33.8	26.0	29.9	-	-	-	4.1	1.7	2.9
D-----	58.8	61.1	59.9	-	-	-	.3	2.8	1.6
E-----	65.3	64.1	64.7	-	99.0	-	-	2.5	-
F-----	39.2	38.8	39.0	74.4	82.6	78.5	-	-	-
G-----	59.5	66.9	63.2	-	-	-	2.2	2.4	2.3
H-----	56.5	73.5	65.0	-	-	-	2.3	2.3	2.3
I-----	63.5	79.3	71.4	-	-	-	-	-	-
J-----	58.4	62.7	60.6	-	-	-	2.2	1.2	1.7
K-----	56.9	72.1	64.5	-	-	-	1.6	1.9	1.8
L-----	50.7	61.0	55.8	-	-	-	2.2	2.2	2.2
M-----	36.1	37.9	37.0	75.1	91.0	83.1	-	-	-
N-----	34.7	53.8	44.3	77.6	72.8	75.2	-	-	-
O-----	42.0	33.9	37.9	63.9	90.5	77.2	-	-	-
P-----	34.9	42.5	38.7	70.7	84.9	77.8	-	3.0	-
Average ³ -----	50.8	55.2	53.0	72.3	86.5	78.4	2.2	2.1	2.0
Range:									
Low-----	33.8	26.0	29.9	63.9	72.8	75.2	.3	.9	1.4
High-----	65.8	79.3	71.4	77.6	99.0	83.1	4.1	3.0	2.9

¹Cost figures generally varied according to the date of collecting the data. The low receipts week represents the first visit to association for all plants except associations A, B, C, D, E and N. The second visit to associations was made about 6 to 9 months after the first. Liquid pack is not included in table because only one association (F) packed liquid eggs. Materials cost for this pack was \$22.0, \$28.8 and \$30.4 cents per case for the low and high receipts week, and average, respectively.

²Unweighted average.

³Unweighted average of vertical column.

Association Trucks

Expenses or costs of operating association trucks are shown by individual cooperatives in tables 44 and 45. Truck expenses for collecting eggs from farm routes averaged 17.7 and 12.2 cents per case for the weeks of low and high receipts respectively (table 44). Truck expenses for delivering eggs to buyers averaged 28.3 and 18.7 cents per case during the two periods (table 45). This cost varied considerably among associations because of the difference in the length of routes, density of pick-up, volume of eggs collected or delivered, and other factors.

Other Direct Costs

There are three other direct costs, (1) replacement cost of eggs damaged or of unsatisfactory quality, (2) service fees for Federal inspection, and (3) royalty on machines for setting up and closing cartons.

No attempt is made in this study to determine costs of replacing eggs unfit for the candling and cartoning packs since such costs are not within the scope of this study. Replacement costs vary widely from association to association and are chiefly dependent upon quality standards, sales outlets, relative prices, and association policies.

Direct costs for Federal inspection and royalties are given in table 19 for the low and high receipts week. Inspection fees were usually 15 percent of the Federal inspector's salary. They are allocated to inspecting, candling, and cartoning in proportion to the case output in each operation. Royalty on cartoning machines is charged entirely to the cartoning operation.

Total Direct Costs

In order to determine total direct costs by operations it is necessary to add, whenever pertinent, the labor, packing materials, truck, and other direct costs. This is shown in a summary table (table 20), combining direct labor costs from table 4, packing materials costs from table 18, truck costs from tables 44 and 45, and other direct costs from table 19.⁵ To illustrate, the average direct labor cost for the collecting operation was 27.6 cents a case during the low receipts week. No packing materials were used for this operation, but operating expenses of association trucks averaged 17.7 cents a case, making a total average direct cost of 45.3 cents a case for this operation. In the instance of the receiving operation, labor constitutes the only direct cost and averaged 2.5 cents per case for the low receipts week. On the other hand, in the cartoning operation there are direct costs for labor, packing materials, Federal inspection, and royalty on cartoning equipment. For the low receipts week these costs averaged a total of \$1.18 a case (table 20).

⁵Egg replacement costs not given in this report.

Table 19. - Costs of Federal inspection fee and royalty for cartoning equipment by specified operations for handling eggs, 11 North Central associations, two 1-week periods, 1950-51

Associations	Inspect- ing	Candling	Cartoning			Eggs handled		
	Federal inspec- tion	Federal inspec- tion	Federal inspec- tion	Royalty cartoning equipment	Total	Inspected	Candled	Cartoned
	<i>Cents per case</i>					<i>Cases</i>		
<u>Low receipts</u> <u>week:</u>								
A-----	-	-	-	(1)	(1)	-	-	-
B-----	-	1.9	-	(1)	(1)	-	469	-
C-----	-	.5	-	-	-	-	542	-
F-----	-	.6	.6	.8	1.4	-	801	1,047
H-----	-	1.4	-	-	-	-	543	-
J-----	-	2.2	-	-	-	-	372	-
L-----	-	1.8	-	-	-	-	370	-
M-----	.4	.4	.4	5.0	5.4	1,640	645	101
N-----	-	1.2	1.2	2.3	3.5	-	360	398
O-----	.6	.6	.6	-	.6	754	1,069	157
P-----	-	1.0	1.0	.1	1.1	-	631	244
Average ² -----	.5	1.2	.8	2.1	2.4	1,197	580	389
Range:								
Low-----	.4	.4	.4	.1	.6	754	360	101
High-----	.6	2.2	1.2	5.0	5.4	1,640	1,069	1,047
<u>High receipts</u> <u>week:</u>								
A-----	-	-	-	1.0	1.0	-	-	894
B-----	-	.7	-	(1)	-	-	1,300	-
C-----	-	.5	-	-	-	-	1,175	-
F-----	-	.4	.4	.4	.8	-	452	1,915
H-----	-	.7	-	-	-	-	1,010	-
J-----	-	1.9	-	-	-	-	480	-
L-----	-	.8	-	-	-	-	911	-
M-----	.4	.4	.4	2.3	2.7	3,548	810	219
N-----	-	1.0	1.0	4.2	5.2	-	632	222
O-----	.5	.5	.5	1.4	1.9	1,201	1,139	364
P-----	-	1.0	1.0	2.3	3.3	-	670	360
Average ² -----	.5	.8	.6	1.9	2.5	2,375	858	662
Range:								
Low-----	.4	.4	.4	.4	.8	1,201	452	219
High-----	.5	1.9	1.0	4.2	5.2	3,548	1,300	1,915

¹Association paid royalty for cartoning equipment but cartoned no eggs.

²Unweighted average.

Table 20. - Average total direct costs of operations, 16 North Central associations, two 1-week periods, 1950-51

Operation	Direct costs				
	Labor	Packing materials	Truck ¹	Other	Total
<i>Cents per case</i>					
<u>Low receipts week:</u>					
Collecting-----	27.6	-	17.7	-	45.3
Receiving-----	2.5	-	-	-	2.5
Inspecting-----	4.3	50.8	-	.5	55.6
Shell treating-----	7.1	-	-	-	7.1
Shell cleaning-----	24.4	-	-	-	24.4
Egg breaking-----	64.4	32.0	-	-	96.4
Candling-----	40.3	50.8	-	1.2	92.3
Cartoning-----	43.6	72.3	-	2.4	118.3
Packing-----	6.3	-	-	-	6.3
Coopering-----	4.7	-	-	-	4.7
Stacking and holding-	2.3	-	-	-	2.3
Loading out-----	1.4	-	-	-	1.4
Delivering-----	10.5	-	28.3	-	38.8
<u>High receipts week:</u>					
Collecting-----	18.9	-	12.2	-	31.1
Receiving-----	1.6	-	-	-	1.6
Inspecting-----	6.5	55.2	-	.5	62.2
Shell treating-----	7.2	-	-	-	7.2
Shell cleaning-----	26.9	-	-	-	26.9
Egg breaking-----	70.0	28.8	-	-	98.8
Candling-----	38.5	55.2	-	.8	94.5
Cartoning-----	46.6	86.5	-	2.5	135.6
Packing-----	3.9	-	-	-	3.9
Coopering-----	4.7	-	-	-	4.7
Stacking and holding-	2.2	-	-	-	2.2
Loading out-----	1.0	-	-	-	1.0
Delivering-----	9.3	-	18.7	-	28.0

¹Represents truck operating expense of association trucks. Cost of contract trucking not included. See discussion of Application of Cost Data, page 28.

INDIRECT COSTS

Unlike total direct costs, total indirect costs do not fluctuate with the total volume of eggs received. However, with a decrease in volume the average per-unit cost increases, and with an increase in volume, the per-unit cost decreases. The amount of the fixed cost for such expenses as heat, electricity, rent, and taxes remains the same, but the per-unit cost of handling the eggs increases when the volume goes down.

Based on the number of cases received, indirect costs averaged 42.0 cents and 26.7 cents per case for the low and the high receipts weeks respectively for the 16 associations. These costs varied from 18.6 to 61.2 cents among associations for the low week and from 13.6 to 38.9 cents for the high receipts week (table 21).

Table 21. - *Indirect costs: Total indirect costs and egg receipts of 16 North Central associations, two 1-week periods, 1950-51*

Association	Indirect costs ¹			Eggs received		
	Low receipts week	High receipts week	Average ²	Low receipts week	High receipts week	Average
	<i>Cents per case</i>			<i>Cases</i>		
A-----	54.32	27.26	40.79	876	1,829	1,353
B-----	55.40	27.82	41.61	514	1,300	907
C-----	52.61	20.97	36.79	618	1,632	1,125
D-----	28.03	25.77	26.90	1,384	1,577	1,480
E-----	52.94	25.54	39.24	370	789	580
F-----	18.55	13.60	16.08	1,868	2,876	2,372
G-----	24.47	16.63	20.55	572	977	774
H-----	49.18	38.89	44.03	614	1,010	812
I-----	50.88	27.01	38.95	445	755	600
J-----	42.09	29.99	36.04	416	691	554
K-----	23.81	28.47	26.14	456	599	527
L-----	61.16	24.69	42.92	446	937	692
M-----	31.02	25.01	28.02	2,386	3,976	3,181
N-----	48.50	33.27	40.88	758	1,060	909
O-----	33.27	25.90	29.59	1,980	2,670	2,325
P-----	46.38	36.92	41.65	875	1,060	967
Average ² ----	42.04	26.73	34.39	911	1,484	1,197
Range:						
Low-----	18.55	13.60	16.08	370	599	527
High-----	61.16	38.89	44.03	2,386	3,976	3,181

¹Based on number of cases received by associations.

²Unweighted average.

Plant and Non-Plant

Tables 22 and 23 give a more detailed analysis of indirect costs for the low and the high receipts weeks. They are classified first into plant and non-plant costs -- then divided into salaries, expenses other than salaries, and depreciation. Such an analysis facilitates the comparison of certain groups of indirect expenses and helps explain variations in costs. These data are shown percentagewise in tables 24 and 25. For both weekly periods, indirect plant costs averaged 32 percent of the total per-unit indirect cost; non-plant costs averaged 68 percent.

APPLICATION OF COST DATA

Direct unit costs given thus far in the report are shown by individual operations. Total over-all costs, both direct and indirect--on a comparable unit basis--can be determined by combining the costs as shown in this report. This will enable the over-all cost of any specific pack of eggs to be determined when the labor, materials, truck, and other costs are known.

All associations packed one or more of four packs of eggs, as follows: (1) consumer grade, loose, in cases; (2) consumer grade, cartoned, in cases; (3) wholesale grade, loose, in cases; and (4) liquid, in cans.

In this chapter on the application of cost data, only the total direct cost by individual associations and the average indirect costs of each pack are given. However, a procedure is presented by which each of the associations studied can quickly and easily determine its total cost for each type of pack. As shown in table 26, the average direct costs of the associations packing each pack have been determined for one high receipts week by the addition of the pertinent costs involved. For example, in determining the total labor cost of the consumer grade, loose pack, the following costs have been considered -- collecting, 19.4 cents; receiving, 1.6 cents; candling, 38.5 cents; coopering, 4.7 cents; stacking and holding, 2.2 cents; loading out, 1.0 cent; and delivering, 9.3 cents. These give a total direct labor cost of 76.7 cents per case. To this figure are added the costs of packing materials, 55.2 cents; trucking, 31.2 cents; and other direct costs, .8 cent, giving a grand total cost of 163.9 cents per case. For purposes of comparison the average total cost and the number of cooperatives that made each pack are as follows:

Type of pack	Number of associations	Average cost in cents per case ¹
Consumer grade, loose-----	16	163.9
Consumer grade, cartoned-----	7	200.3
Wholesale grade, loose-----	2	96.0
Liquid-----	1	135.7

¹The cost to replace eggs not suitable for use in each pack is not included in these costs, but must be considered when these data are used to determine necessary mark-ups.

Table 22. - Indirect costs: Plant, non-plant, and total indirect costs per case of eggs received, 16 North Central associations, one low receipts week, 1950-51

Associ- ation	Indirect plant costs				Indirect non-plant costs				Total indirect costs		
	Salaries ¹	Other ²	Sub- total ³	Depreci- ation ⁴	Total	Salaries ⁵	Other ⁶	Sub- total ³		Depreci- ation	Total
Cents per case											
A-----	15.39	10.97	26.36	2.32	28.68	10.84	13.99	24.83	.81	25.64	54.32
B-----	6.99	10.36	17.35	6.54	23.89	23.80	7.40	31.20	.31	31.51	55.40
C-----	4.53	10.65	15.18	1.50	16.68	20.07	15.46	35.53	.40	35.93	52.61
D-----	0.00	8.13	8.13	3.01	11.14	11.19	5.48	16.67	.22	16.89	28.03
E-----	5.35	9.47	14.82	1.82	16.64	27.96	8.27	36.23	.07	36.30	52.94
F-----	3.30	3.23	6.53	.75	7.28	6.22	4.91	11.13	.14	11.27	18.55
G-----	0.00	3.14	3.14	1.70	4.84	12.99	6.48	19.47	.16	19.63	24.47
H-----	3.14	10.64	13.78	5.53	19.31	17.63	11.84	29.47	.40	29.87	49.18
I-----	0.00	9.96	9.96	5.55	15.51	18.21	16.96	35.17	.20	35.37	50.88
J-----	0.00	8.02	8.02	2.23	10.25	16.96	14.58	31.54	.30	31.84	42.09
K-----	0.00	3.42	3.42	1.87	5.29	15.42	2.91	18.33	.19	18.52	23.81
L-----	0.00	9.32	9.32	3.33	12.65	30.71	17.07	47.78	.73	48.51	61.16
M-----	5.57	3.44	9.01	1.47	10.48	15.49	4.50	19.99	.55	20.54	31.02
N-----	0.00	6.20	6.20	4.34	10.54	25.07	12.27	37.34	.62	37.96	48.50
O-----	4.57	3.56	8.13	1.44	9.57	16.57	6.79	23.36	.34	23.70	33.27
P-----	6.85	2.50	9.35	1.83	11.18	25.74	8.87	34.61	.59	35.20	46.38
Average ⁸	3.48	7.06	10.54	2.83	13.37	18.43	9.86	28.29	.38	28.67	42.04
Range:											
Low----	0.00	2.50	3.14	.75	4.84	6.22	2.91	11.13	.07	11.27	18.55
High---	15.39	10.97	26.36	6.54	28.68	30.71	17.07	47.78	.81	48.51	61.16

- ¹Includes association wages or salaries for plant supervision, janitor and watchmen, and maintenance and repair labor.
²Includes expenses for heat, utilities, general insurance, taxes (real estate and personal property), maintenance and repair, plant supplies, and miscellaneous plant expenses. Depreciation expense not included.
³Total of two preceding columns.
⁴Includes depreciation expense of buildings and plant machinery and equipment.
⁵Includes managerial, clerical, fieldmen and salesmen's salaries.
⁶Includes such non-plant expenses as telephone and telegraph, advertising, auditing, directors' expense, annual meeting, etc. Depreciation expense not included.
⁷Includes depreciation expense of office furniture and fixtures and automobiles and automobiles, if any, used for general purposes.
⁸Unweighted average.

Table 24. - Indirect costs: Percentage distribution of plant, non-plant and total indirect costs per case of eggs received, 16 North Central associations, one low receipts week, 1950-51

Associ- ation	Indirect plant costs				Indirect non-plant costs				Total indirect costs		
	Salaries ¹	Other ²	Sub- total ³	Depreci- ation ⁴	Total	Salaries ⁵	Other ⁶	Sub- total ³		Depreci- ation ⁷	Total
Percent											
A-----	28.3	20.2	48.5	4.3	52.8	20.0	25.7	45.7	1.5	47.2	100.0
B-----	12.6	18.7	31.3	11.8	43.1	43.0	13.3	56.3	.6	56.9	100.0
C-----	8.6	20.3	28.9	2.8	31.7	38.1	29.4	67.5	.8	68.3	100.0
D-----	0.0	29.0	29.0	10.7	39.7	39.9	19.6	59.5	.8	60.3	100.0
E-----	10.1	17.9	28.0	3.4	31.4	52.8	15.7	68.5	.1	68.6	100.0
F-----	17.8	17.4	35.2	4.0	39.2	33.5	26.5	60.0	.8	60.8	100.0
G-----	0.0	12.8	12.8	7.0	19.8	53.1	26.5	79.6	.6	80.2	100.0
H-----	6.4	21.6	28.0	11.3	39.3	35.8	24.1	59.9	.8	60.7	100.0
I-----	0.0	19.6	19.6	10.9	30.5	35.8	33.3	69.1	.4	69.5	100.0
J-----	0.0	19.1	19.1	5.3	24.4	40.3	34.6	74.9	.7	75.6	100.0
K-----	0.0	14.4	14.4	7.8	22.2	64.8	12.2	77.0	.8	77.8	100.0
L-----	0.0	15.2	15.2	5.5	20.7	50.2	27.9	78.1	1.2	79.3	100.0
M-----	18.0	11.1	29.1	4.7	33.8	49.9	14.5	64.4	1.8	66.2	100.0
N-----	0.0	12.8	12.8	8.9	21.7	51.7	25.3	77.0	1.3	78.3	100.0
O-----	13.7	10.7	24.4	4.4	28.8	49.8	20.4	70.2	1.0	71.2	100.0
P-----	14.7	5.4	20.1	4.0	24.1	55.5	19.1	74.6	1.3	75.9	100.0
Average ⁸ -	8.3	16.8	25.1	6.7	31.8	43.8	23.5	67.3	.9	68.2	100.0
Range:											
Low----	0.0	5.4	12.8	2.8	19.8	20.0	12.2	45.7	.1	47.2	-
High----	28.3	29.0	48.5	11.8	52.8	64.8	34.6	79.6	1.8	80.2	-

¹Includes association wages or salaries for plant supervision, janitor and watchmen, and maintenance and repair labor.

²Includes expenses for heat, utilities, general insurance, taxes (real estate and personal property), maintenance and repair, plant supplies, and miscellaneous plant expenses. Depreciation expense not included.

³Total of two preceding columns.

⁴Includes depreciation expense of buildings and plant machinery and equipment.

⁵Includes managerial, clerical, fieldmen and salesmen's salaries.

⁶Includes such non-plant expenses as telephone and telegraph, advertising, auditing, directors' expense, annual meeting, etc. Depreciation expense not included.

⁷Includes depreciation expense of office furniture and fixtures and automobile, if any, used for general purposes.

⁸Unweighted average.

Table 25. - Indirect costs: Percentage distribution of plant, non-plant, and total indirect costs per case of eggs received, 16 North Central associations, one high receipts week, 1950-51

Associ- ation	Indirect plant costs				Indirect non-plant costs				Total indirect costs		
	Salaries ¹	Other ²	Sub- total ³	Depreci- ation	Total	Salaries ⁵	Other ⁶	Sub- total ³		Depreci- ation ⁷	Total
Percent											
A-----	18.5	19.2	37.7	4.1	41.8	32.2	24.6	56.8	1.4	58.2	100.0
B-----	16.4	14.7	31.1	9.3	40.4	48.7	10.5	59.2	.4	59.6	100.0
C-----	7.2	19.2	26.4	2.7	29.1	42.2	28.0	70.2	.7	70.9	100.0
D-----	2.9	27.7	30.6	10.2	40.8	39.8	18.7	58.5	.7	59.2	100.0
E-----	21.6	17.4	39.0	3.3	42.3	42.4	15.2	57.6	.1	57.7	100.0
F-----	15.2	12.4	27.6	8.7	36.3	40.0	22.6	62.6	1.1	63.7	100.0
G-----	1.6	12.4	14.0	6.1	20.1	61.8	17.6	79.4	.5	79.9	100.0
H-----	7.7	16.0	23.7	8.7	32.4	49.2	17.9	67.1	.5	67.6	100.0
I-----	5.7	19.3	25.0	12.1	37.1	46.1	16.5	62.6	.3	62.9	100.0
J-----	1.1	16.0	17.1	5.5	22.6	49.5	27.3	76.8	.6	77.4	100.0
K-----	7.1	10.9	18.0	5.0	23.0	64.5	11.8	76.3	.7	77.0	100.0
L-----	2.4	16.1	18.5	6.4	24.9	45.4	28.3	73.7	1.4	75.1	100.0
M-----	19.7	11.1	30.8	4.4	35.2	47.4	15.7	63.1	1.7	64.8	100.0
N-----	0.0	14.4	14.4	8.9	23.3	51.3	24.0	75.3	1.4	76.7	100.0
O-----	14.8	10.6	25.4	4.0	29.4	49.7	19.9	69.6	1.0	70.6	100.0
P-----	26.7	5.3	32.0	2.9	34.9	41.9	22.1	64.0	1.1	65.1	100.0
Average ⁸ ---	10.7	15.0	25.7	6.4	32.1	47.1	19.9	67.0	.9	67.9	100.0
Range:											
Low-----	0.0	5.3	14.0	2.7	20.1	32.2	10.5	56.8	.1	57.7	-
High-----	26.7	27.7	39.0	12.1	42.3	64.5	28.3	79.4	1.7	79.9	-

¹Includes association wages or salaries for plant supervision, janitor and watchmen, and maintenance and repair labor.

²Includes expenses for heat, utilities, general insurance, taxes (real estate and personal property), maintenance and repair, plant supplies, and miscellaneous plant expenses. Depreciation expense not included.

³Total of two preceding columns.

⁴Includes depreciation expense of buildings and plant machinery and equipment.

⁵Includes managerial, clerical, fieldmen and salesmen's salaries.

⁶Includes such non-plant expenses as telephone and telegraph, advertising, auditing, directors' expense, annual meeting, etc. Depreciation expense not included.

⁷Includes depreciation expense of office furniture and fixtures and automobile, if any, used for general purposes.

⁸Unweighted average.

Table 26. - Average direct costs for specified types of egg packs, 16 North Central associations, one high receipts week, 1950-51

Costs involved ¹	Type of pack			
	Consumer grade, loose	Consumer grade, cartoned	Wholesale grade, loose	Liquid ²
	<i>Cents per case</i>			
<u>Direct labor:</u>				
Collecting-----	19.4	18.1	16.3	18.9
Receiving-----	1.6	1.2	1.5	2.0
Inspecting-----	(3)	(3)	6.5	-
Shell treating-----	(3)	(3)	-	-
Shell cleaning-----	(3)	(3)	-	-
Egg breaking-----	-	-	-	70.0
Candling-----	38.5	-	-	(2)
Cartoning-----	-	46.6	-	-
Packing-----	-	3.9	-	-
Coopering-----	4.7	4.8	3.6	3.8
Stacking and holding-----	2.2	2.3	3.2	(2)
Loading out-----	1.0	1.1	.8	(2)
Delivering-----	9.3	8.1	7.2	(2)
Total direct labor-----	76.7	86.1	39.1	94.7
Packing materials-----	55.2	86.5	35.9	28.8
Truck ⁴ -----	31.2	25.2	20.6	12.2
Other-----	.8	2.5	.4	-
Total direct costs-----	163.9	200.3	96.0	135.7

Cost figures are averages for actual number of associations that packed each type of pack: Consumer grade, loose, 16; consumer grade, cartoned, 7; wholesale grade, loose, 2; and liquid, 1.

¹Costs for replacing eggs are not included. In instances where an association did not perform an operation or in which cost figures in some operations were not useable, the average of such costs is included. See table 27 including footnotes for explanation of costs.

²No attempt was made in this study to determine costs chargeable to the liquid egg pack for stacking and holding, loading out, delivering and candling.

³Average costs for inspecting, shell treating including oil and shell cleaning were 6.5, 9.3 and 26.9 cents per case respectively. When any of these services are performed, the cost for them should be included.

⁴Average truck operating expenses of association trucks for collecting and delivering. Cost or charges of contract trucking are not included. Collecting and delivering costs, including labor, should be charged only to the actual number of cases collected or delivered.

The procedure as explained above is followed to determine the total direct cost of each pack by individual associations. In the first column of table 27, under labor, only the total direct labor cost by each pack is given. In the three following columns the total cost is shown for packing materials, trucks, and other costs. In the consumer grade, loose pack, the totals of all direct costs varied widely among associations. For example, the lowest total direct cost is 121.1 cents for association O and the highest, 203.3 cents per case, for association H -- a difference of 82.2 cents. Variations in costs among associations in the consumer grade, cartoned pack, are wide but to a lesser extent than those of the consumer grade, loose pack.

To find the total cost of each pack the indirect cost is added to the direct costs. In table 28 the indirect cost, both plant and non-plant -- although not allocated to egg-handling operations -- is apportioned to each pack by 3 different methods as follows: (1) Under method 1 in the same ratio as total direct labor cost of each pack,⁶ (2) under method 2 in the same ratio as total direct cost,⁷ and (3) under method 3 in same amount irrespective of the type of pack.⁸ Another method of allocation would be in relation to the number of labor hours used in each pack.

The three methods are given (1) to show different ways in which indirect costs may be allocated, (2) to show the extent that costs vary by using each method, and (3) to indicate that any one method may not be applicable to a given association. An association in allocating indirect cost should select the method most applicable to its operations.

In table 28, the total direct costs from table 26 have been added to indirect costs under each method to give a grand total cost per pack. Under method 1, for illustration, it cost an average of 6.36 cents per dozen to pack a dozen of consumer graded, case-packed eggs; 7.69 cents for consumer graded, cartoned eggs; 3.66 cents for wholesale graded, case-packed eggs; and 5.63 cents per dozen for liquid eggs.

For the consumer grade, loose pack, all three methods of allocating indirect cost resulted in nearly the same total cost per dozen. For the consumer grade, cartoned pack methods 1 and 2 give costs somewhat higher than under method 3. For the wholesale grade, loose pack, the reverse is true.

Table 29 is an illustrative table showing the procedure that may be followed by an association to determine the total cost for any pack of

⁶ Illustration: The average direct labor cost for consumer grade, loose pack eggs is 76.7 cents per case (table 26). This is 103.44 percent of the average total direct labor cost for the four packs. This percentage times the total average indirect cost, 26.1 cents (table 28, under method 3), is equal to 27.0 cents per case. The total indirect cost is determined in the same manner for each type of pack by this method.

⁷ Under method 2 the same method of calculation, as explained in footnote 6, for method 1 was used except that the percentage of average total direct costs (table 26) was applied instead of the percentage of the total direct labor costs.

⁸ Under method 3 the indirect costs were allocated equally -- irrespective of type of pack.

Table 27. - Total direct costs of specified types of egg packs by specified North Central associations, one high receipts week, 1950-51

Association and type of pack	Direct costs involved ¹				
	Labor ²	Packing materials	Truck ²	Other	Total
Cents per case					
Consumer grade, loose:					
A-----	³ 77.2	55.3	³ 33.4	⁴ .8	166.7
B-----	³ ⁵ 62.0	53.6	³ ⁵ 30.9	.7	147.2
C-----	75.2	26.0	77.6	.5	179.3
D-----	³ 54.6	61.1	³ 24.9	⁴ .8	141.4
E-----	³ ⁶ 69.0	64.1	³ ⁶ 30.9	⁴ .8	164.8
F-----	⁶ 75.6	38.8	⁶ 17.7	.4	132.5
G-----	³ 79.6	66.9	³ 28.8	⁴ .8	176.1
H-----	³ 92.7	73.5	³ 36.4	.7	203.3
I-----	³ ⁶ 64.9	79.3	³ ⁶ 30.9	⁴ .8	175.9
J-----	³ ⁶ 87.6	62.7	³ ⁶ 30.9	1.9	183.1
K-----	³ 77.4	72.1	³ 33.2	⁴ .8	183.5
L-----	³ 103.2	61.0	³ 30.1	.8	195.1
M-----	74.1	37.9	18.8	.4	131.2
N-----	98.7	53.8	22.7	1.0	176.2
O-----	64.4	33.9	22.3	.5	121.1
P-----	⁸ 71.0	42.5	⁸ 30.9	1.0	145.4
Average-----	76.7	55.2	31.2	.8	163.9
Consumer grade, cartoned:					
A-----	³ 92.3	84.5	³ 33.4	1.0	211.2
E-----	³ ⁶ 83.3	99.0	³ ⁶ 30.9	⁴ 2.5	215.7
F-----	⁶ 83.7	82.6	⁶ 17.7	.8	184.8
M-----	57.8	91.0	18.8	2.7	170.3
N-----	106.0	72.8	22.7	5.2	206.7
O-----	95.4	90.5	22.3	1.9	210.1
P-----	⁸ 83.9	84.9	⁸ 30.9	3.3	203.0
Average-----	86.1	86.5	25.2	2.5	200.3
Wholesale grade, loose:					
M-----	40.1	37.9	18.8	.4	97.2
O-----	38.0	33.9	22.3	.5	94.7
Average-----	39.1	35.9	20.5	.5	96.0
Liquid, in cans: ⁹					
F-----	⁶ 94.7	28.8	⁶ 12.2	0	135.7

¹Costs for shell treating, shell cleaning, and for egg replacement are not included. When costs for these are incurred they should be included.

²Costs for collecting and delivering eggs by contract truckers are not included because in this instance it was not possible to separate labor and truck operating expenses.

³Association did not perform the delivering operation; however, to make figures uniform for comparison, the average delivering costs for direct labor and truck operating (9.3 and 18.7 cents per case respectively) are included.

⁴Association had no "Other Direct Costs"; however, to make figures uniform for comparison, the average cost is included (.8 and 2.5 cents per case for consumer grade, loose and consumer grade, cartoned, respectively).

⁵The collecting cost was not available, but to make figures uniform for comparison, the average collecting cost (18.9 cents per case) is included.

⁶Although association had no collecting service, the average collecting costs for direct labor and truck operating (18.9 and 12.2 cents per case respectively) are included for uniformity.

⁷The direct labor and truck operating expense for collecting was not available separately. These costs are estimated based upon the average labor and truck costs to total collecting cost.

⁸The average labor and truck expense for collecting and delivering is used because of the small volume of eggs collected and delivered.

⁹No attempt was made in this study to determine costs chargeable to the liquid egg pack for stacking and holding, loading out, delivering, and candling.

Table 28. - Average costs of specified types of egg packs with alternate methods of allocating indirect cost, 16 North Central associations, one high receipts week, 1950-51

Costs involved ¹	Type of pack			
	Consumer grade, loose	Consumer grade, cartoned	Wholesale grade, loose	Liquid ²
	Cents per case			
<u>Method 1</u>				
Indirect plant ³ -----	8.9	10.0	4.5	11.0
Indirect non-plant ³ -----	18.1	20.3	9.2	22.3
Total indirect ³ -----	27.0	30.3	13.7	33.3
Total direct costs (table 26)-----	163.9	200.3	96.0	135.7
Grand total cost:				
Per 30-dozen-----	190.9	230.6	109.7	169.0
Per dozen-----	6.36	7.69	3.66	5.63
<u>Method 2</u>				
Indirect plant ⁴ -----	9.5	11.6	5.5	7.8
Indirect non-plant ⁴ -----	19.2	23.5	11.3	16.0
Total indirect ⁴ -----	28.7	35.1	16.8	23.8
Total direct costs (table 26)-----	163.9	200.3	96.0	135.7
Grand total cost:				
Per 30-dozen case-----	192.6	235.4	112.8	159.5
Per dozen-----	6.42	7.85	3.76	5.32
<u>Method 3</u>				
Indirect plant ⁵ -----	8.6	8.6	8.6	8.6
Indirect non-plant ⁵ -----	17.5	17.5	17.5	17.5
Total indirect ⁵ -----	26.1	26.1	26.1	26.1
Total direct cost (table 26)-----	163.9	200.3	96.0	135.7
Grand total cost:				
Per 30-dozen-----	190.0	226.4	122.1	161.8
Per dozen-----	6.33	7.55	4.07	5.39

Cost figures are averages for actual number of associations that packed each type of pack: Consumer grade, loose, 16; consumer grade, cartoned, 7; wholesale grade, loose, 2; and liquid, 1.

¹Costs for replacing eggs are not included.

²No attempt was made in this study to determine all costs chargeable to the liquid egg pack such as stacking and holding, loading out, delivering and candling.

³Allocated in same ratio as the direct labor cost of each pack as shown in table 26.

⁴Allocated in same ratio as the total direct costs of each pack as shown in table 26.

⁵Allocated equally without regard to type of pack.

Table 29. - Total cost for specified types of egg packs, 1 North Central association (0), one high receipts week, 1950-51

Costs involved ¹	Type of pack			
	Consumer grade, loose	Consumer grade, cartoned	Wholesale grade, loose	Liquid
	<i>Cents per case</i>			
Direct cost				
Direct labor:				
Collecting-----	17.8	17.8	17.8	N
Receiving-----	.7	.7	.7	
Inspecting-----	(2)	(2)	6.4	O
Shell treating-----	(2)	(2)	-	
Shell cleaning-----	(2)	(2)	-	N
Egg breaking-----	-	-	-	
Candling-----	32.8	-	-	E
Cartoning-----	-	55.1	-	
Packing-----	-	8.7	-	
Coopering-----	3.1	3.1	3.1	
Stacking and holding----	2.1	2.1	2.1	
Loading out-----	.6	.6	.6	
Delivering-----	7.3	7.3	7.3	
Total direct labor-----	64.4	95.4	38.0	
Packing materials-----	33.9	90.5	33.9	
Truck-----	22.3	22.3	22.3	
Other-----	.5	1.9	.5	
Total direct cost-----	121.1	210.1	94.7	
Indirect cost³				
Plant-----	7.4	11.0	4.4	
Non-plant-----	17.9	26.5	10.5	
Total indirect cost-----	25.3	37.5	14.9	
Total cost				
Per case-----	146.4	247.6	109.6	
Per dozen-----	4.88	8.25	3.65	

¹Costs for replacing eggs are not included.

²Costs for inspecting, shell treating, and shell cleaning must be included in the particular pack concerned when such services are performed.

³Indirect costs are allocated to each pack in the same ratio as total direct labor cost, method 1. Method of calculation: The average direct labor cost of the three packs of eggs is 65.93 cents per case. The direct labor cost of the consumer grade, loose pack is 64.4 cents. This is 97.68 percent of the average. This percentage times the indirect costs as shown in table 23 (plant, 7.6 cents; non-plant, 18.3 cents; and total, 25.9 cents) is equal to 7.4, 17.9 and 25.3 cents respectively. The same procedure is followed for the other two packs of eggs.

eggs. In this illustration, method 1, based on total direct labor cost, was used to determine indirect cost.

To determine the direct cost of any specific operation, it is necessary to total the labor, materials, truck, and other costs applicable to the operation (see table 20). To determine the total cost by operations, indirect costs should be added to direct costs. In this study, however, indirect costs have not been allocated to operations and, therefore, only direct costs by operations are shown.

OUTPUT PER MAN-HOUR

Since wage rates and amount of overtime work vary among plants, case output per man-hour is usually a more reliable measure of labor efficiency than labor unit costs. The rate of pay for overtime work at the associations studied was generally one and one-half times the regular labor rate.

BY OPERATIONS

Case output per man-hour by operations is given in summary form in table 30. This table shows a wide range of output among the operations. For example, the receiving, stacking and holding, and loading out operations had the largest output per man-hour with an average for these operations of 95 cases during the two periods. On the other hand, the average egg-breaking output was only 1.3 cases. This is indicative of the wide range in the labor requirements of the different operations.

BY ASSOCIATIONS

Case output per man-hour of labor for the low and the high receipts week is given by associations for each of 13 operations in tables 31 to 43. These tables make it possible to compare labor efficiency among plants by operations. For example, in the candling operation during the high receipts week (table 37) association K was the most efficient with 3.4 cases per man-hour and association N the least efficient with only 1.6 cases. Other operations show similarly wide variations -- thereby indicating that opportunities exist for increased labor efficiency in many or all of the plants in one or more operations.

Table 30. - Summary of output per man-hour of labor for various egg-handling operations by specified number of North Central associations, two 1-week periods, 1950-51

Operation	Associations performing operation		Output per man-hour of labor ¹		
	Low receipts week	High receipts week	Low receipts week	High receipts week	Average ²
	<i>Number</i>		<i>Cases</i>		
Collecting-----	6	8	5.6	6.8	6.1
Receiving-----	16	16	53.4	104.0	78.7
Inspecting-----	2	2	23.1	17.0	20.0
Shell treating-----	9	9	13.0	12.4	12.5
Shell cleaning-----	2	3	3.2	4.0	4.0
Egg breaking-----	1	1	1.3	1.2	1.3
Candling-----	16	16	2.2	2.4	2.3
Cartoning-----	5	7	2.7	2.3	2.6
Packing-----	5	7	21.6	32.0	27.7
Coopering-----	14	16	21.9	22.7	22.4
Stacking and holding----	16	16	72.8	75.5	74.1
Loading out-----	16	16	115.0	147.5	131.3
Delivering-----	2	4	21.4	21.7	24.2

¹Figures taken from tables 31 through 43.

²Unweighted average. See also footnote 1.

Table 31. - Collecting eggs from farms: Output per man-hour of labor, nine North Central associations, two 1-week periods, 1950-51

Associations performing operation	Output per man-hour of labor		
	Low receipts week	High receipts week	Average ¹
	<i>Cases</i>		
A ² -----	-	-	-
B ² -----	-	-	-
C-----	(2)	5.9	-
D-----	10.3	12.0	11.2
G-----	5.1	7.1	6.1
H ² -----	-	-	-
K-----	5.3	2.6	3.9
L-----	1.8	4.2	3.0
M-----	-	8.8	-
N-----	4.7	7.2	6.0
O-----	6.5	6.3	6.4
P ³ -----	4.2	9.4	6.8
Average ⁴ -----	5.6	6.8	6.1
Range:			
Low-----	1.8	2.6	3.0
High-----	10.3	12.0	11.2

¹Unweighted average.

²Data not available.

³Not included in average or range because of small volume collected. See also table 5.

⁴Unweighted average of vertical column.

Table 32. - *Receiving eggs: Output per man-hour of labor, 16 North Central associations, two 1-week periods, 1950-51*

Associations performing operation	Output per man-hour of labor		
	Low receipts week	High receipts week	Average ¹
	<i>Cases</i>		
A-----	37.3	76.2	56.8
B-----	15.8	54.2	35.0
C-----	130.1	97.4	113.7
D-----	59.5	137.1	98.3
E-----	17.4	157.8	87.6
F-----	43.4	62.2	52.8
G-----	27.9	65.1	46.5
H-----	29.6	43.0	36.3
I-----	29.7	27.0	28.4
J-----	118.9	345.5	232.2
K-----	45.6	27.2	36.4
L-----	49.6	93.7	71.6
M-----	57.5	56.4	57.0
N-----	63.2	96.4	79.8
O-----	93.2	148.3	120.7
P-----	36.5	176.7	106.6
Average ¹ -----	53.4	104.0	78.7
Range:			
Low-----	15.8	27.0	28.4
High-----	130.1	345.5	232.2

¹Unweighted average.Table 33. - *Inspecting eggs: Output per man-hour of labor, three North Central associations, two 1-week periods, 1950-51*

Associations performing operation	Output per man-hour of labor		
	Low receipts week	High receipts week	Average ¹
	<i>Cases</i>		
J ² -----	11.0	57.0	34.0
M-----	25.7	18.2	21.9
O-----	20.4	15.8	18.1
Average ³ -----	23.1	17.0	20.0
Range:			
Low-----	20.4	15.8	18.1
High-----	25.7	18.2	21.9

¹Unweighted average.²Not included in average or range because these figures represent inspection of candled eggs received from stations.³Unweighted average of associations M and O.

Table 34. - *Shell treating eggs: Output per-man hour of labor, 11 North Central associations, two 1-week periods, 1950-51*

Associations performing operation	Output per man-hour of labor		
	Low receipts week	High receipts week	Average ¹
	<i>Cases</i>		
A-----	19.6	-	-
B-----	13.2	13.7	13.5
C-----	9.4	11.8	10.6
D-----	19.8	13.8	16.8
E-----	-	9.5	-
G-----	10.1	17.2	13.6
H-----	12.1	11.8	12.0
J-----	11.5	9.7	10.6
K-----	11.7	11.4	11.5
L-----	9.5	12.8	11.2
P ² -----	-	7.5	-
Average ³ -----	13.0	12.4	12.5
Range:			
Low-----	9.4	9.5	10.6
High-----	19.8	17.2	16.8

¹Unweighted average.

²Not included in average or range because of small volume shell treated. See also table 8.

³Unweighted average of vertical column excluding association P.

Table 35. - *Shell cleaning eggs: Output per man-hour of labor, three North Central associations, two 1-week periods, 1950-51*

Associations performing operation	Output per man-hour of labor		
	Low receipts week	High receipts week	Average ¹
	<i>Cases</i>		
A-----	3.8	7.1	5.5
G-----	-	2.4	-
K-----	2.6	2.5	2.5
Average ² -----	3.2	4.0	4.0
Range:			
Low-----	2.6	2.4	2.5
High-----	3.8	7.1	5.5

¹Unweighted average.

²Unweighted average of vertical column.

Table 36. - Egg breaking: Output per man-hour of labor, one North Central association, two 1-week periods, 1950-51

Association performing operation	Output per man-hour of labor		
	Low receipts week	High receipts week	Average ¹
	<i>Cases</i>		
F-----	1.3	1.2	1.3

¹Unweighted average.

Table 37. - Candling eggs: Output per man-hour of labor, 16 North Central associations, two 1-week periods, 1950-51

Associations performing operation	Output per man-hour of labor		
	Low receipts week	High receipts week	Average ¹
	<i>Cases</i>		
A-----	1.6	1.9	1.8
B-----	2.1	2.6	2.3
C-----	2.0	2.3	2.2
D-----	2.4	2.7	2.5
E-----	1.7	2.4	2.1
F-----	2.1	2.3	2.2
G-----	2.0	1.7	1.8
H-----	1.7	1.9	1.8
I-----	2.7	3.1	2.9
J-----	2.6	2.0	2.3
K-----	2.8	3.4	3.1
L-----	1.4	1.9	1.7
M-----	2.6	2.6	2.6
N-----	2.0	1.6	1.8
O-----	2.8	2.8	2.8
P-----	2.5	2.7	2.6
Average ¹ -----	2.2	2.4	2.3
Range:			
Low-----	1.4	1.6	1.7
High-----	2.8	3.4	3.1

¹Unweighted average.

Table 38. - *Cartoning eggs: Output per man-hour of labor, seven North Central associations, two 1-week periods, 1950-51*

Associations performing operation	Output per man-hour of labor		
	Low receipts week	High receipts week	Average ¹
	<i>Cases</i>		
A-----	-	1.6	-
E-----	-	1.8	-
F-----	1.7	2.0	1.9
M-----	6.5	5.1	5.8
N-----	1.8	1.5	1.6
O-----	1.8	1.6	1.7
P-----	1.8	2.2	2.0
Average ² -----	2.7	2.3	2.6
Range:			
Low-----	1.7	1.5	1.6
High-----	6.5	5.1	5.8

¹Unweighted average.

²Unweighted average of vertical column.

Table 39. - *Packing cartoned eggs: Output per man-hour of labor, seven North Central associations, two 1-week periods, 1950-51*

Associations performing operation	Output per man-hour of labor		
	Low receipts week	High receipts week	Average ¹
	<i>Cases</i>		
A-----	-	14.7	-
E-----	-	40.0	-
F-----	30.3	49.4	39.9
M-----	18.4	31.3	24.8
N-----	22.7	31.7	27.2
O-----	4.9	9.1	7.0
P-----	31.5	48.0	39.8
Average ² -----	21.6	32.0	27.7
Range:			
Low-----	4.9	9.1	7.0
High-----	31.5	49.4	39.9

¹Unweighted average.

²Unweighted average of vertical column.

Table 40. - Coopering egg cases: Output per man-hour of labor, 16 North Central associations, two 1-week periods, 1950-51

Associations performing operation	Output per man-hour of labor		
	Low receipts week	High receipts week	Average ¹
Cases			
A-----	17.0	15.5	16.2
B-----	13.2	28.6	20.9
C-----	23.3	34.4	28.8
D-----	(2)	17.7	-
E-----	18.6	31.7	25.2
F-----	17.3	23.7	20.5
G-----	16.4	16.1	16.2
H-----	18.1	12.2	15.2
I-----	44.5	28.5	36.5
J-----	32.0	27.3	29.6
K-----	31.5	13.6	22.6
L-----	11.6	20.1	15.8
M-----	(2)	25.2	-
N-----	16.9	11.8	14.4
O-----	22.5	31.0	26.7
P-----	24.3	26.5	25.4
Average ³ -----	21.9	22.7	22.4
Range:			
Low-----	11.6	11.8	14.4
High-----	44.5	34.4	36.5

¹Unweighted average.²Data not available.³Unweighted average of vertical column.

Table 41. - Stacking eggs in holding rooms: Output per man-hour of labor, 16 North Central associations, two 1-week periods, 1950-51

Associations performing operation	Output per man-hour of labor		
	Low receipts week	High receipts week	Average ¹
Cases			
A-----	290.3	135.5	212.9
B-----	58.7	162.5	110.6
C-----	39.2	116.6	77.9
D-----	64.4	42.9	53.7
E-----	23.9	112.7	68.3
F-----	82.1	70.1	76.1
G-----	95.3	57.5	76.4
H-----	68.2	50.5	59.3
I-----	178.0	65.6	121.8
J-----	46.2	115.2	80.7
K-----	62.2	122.0	92.1
L-----	25.1	15.5	20.3
M-----	25.0	27.6	26.3
N-----	21.3	26.5	23.9
O-----	48.3	48.1	48.2
P-----	36.5	38.9	37.7
Average ¹ -----	72.8	75.5	74.1
Range:			
Low-----	21.3	15.5	20.3
High-----	290.3	162.5	212.9

¹Unweighted average.

Table 42. - *Loading out eggs: Output per man-hour of labor, 16 North Central associations, two 1-week periods, 1950-51*

Associations performing operation	Output per man-hour of labor		
	Low receipts week	High receipts week	Average ¹
<i>Cases</i>			
A-----	158.4	86.3	122.4
B-----	79.1	325.0	202.0
C-----	41.2	68.0	54.6
D-----	79.7	109.6	94.6
E-----	43.8	197.2	120.5
F-----	68.5	52.4	60.5
G-----	104.5	163.0	133.7
H-----	60.4	108.8	84.6
I-----	178.0	324.0	251.0
J-----	52.0	55.8	53.9
K-----	498.0	211.0	354.5
L-----	136.6	136.5	136.6
M-----	157.2	110.1	133.6
N-----	55.0	58.7	56.9
O-----	91.2	172.3	131.7
P-----	36.8	180.7	108.8
Average ¹ -----	115.0	147.5	131.3
Range:			
Low-----	36.8	52.4	53.9
High-----	498.0	325.0	354.5

¹Unweighted average.Table 43. - *Delivering eggs to buyers: Output per man-hour of labor, five North Central associations, two 1-week periods, 1950-51¹*

Associations performing operation	Output per man-hour of labor		
	Low receipts week	High receipts week	Average ²
<i>Cases</i>			
F-----	32.5	36.1	34.3
M-----	-	18.5	-
N-----	³ 9.2	14.5	³ 11.8
O-----	10.2	17.8	14.0
P-----	-	³ 12.0	-
Average ⁴ -----	21.4	21.7	24.2
Range:			
Low-----	10.2	14.5	14.0
High-----	32.5	36.1	34.3

¹Does not include contract hauling or freight shipments.²Unweighted average.³Not included in average or range because of small volume delivered. See also table 17.⁴Unweighted average of vertical column excluding associations N and P where indicated by 3/.

Table 44. - Collecting eggs from farms: Direct costs and eggs collected, 12 North Central associations, two 1-week periods, 1950-51

Associations performing operation	Collecting costs					Eggs collected		
	Association trucks			Contract trucks ¹	Total	Associa- tion trucks	Contract trucks	Total
	Direct labor	Truck oper- ating	Total					
	Cents per case					Cases		
<u>Low receipts week:</u>								
A-----	30.0	22.5	52.5	-	52.5	836	-	836
B-----	33.7	11.4	45.1	-	45.1	446	-	446
C-----	33.9	27.7	61.6	-	61.6	234	-	234
D-----	11.2	10.4	21.6	-	21.6	858	-	858
G-----	16.1	13.3	29.4	-	29.4	452	-	452
H-----	(2)	(2)	25.7	-	25.7	109	-	109
K-----	17.7	6.3	24.0	45.0	³ 31.3	107	57	164
L-----	62.1	22.8	84.9	-	84.9	402	-	402
M-----	-	-	-	38.6	38.6	-	1,262	1,262
N-----	27.7	26.2	53.9	-	53.9	659	-	659
O-----	15.6	18.9	34.5	-	34.5	1,861	-	1,861
P-----	⁴ 19.7	⁴ 45.7	⁴ 65.4	26.8	³ 30.9	⁴ 63	537	600
Average ⁵ -----	27.6	17.7	43.3	36.8	42.5	596	619	657
Range:								
Low-----	11.2	6.3	21.6	26.8	21.6	107	57	109
High-----	62.1	27.7	84.9	45.0	84.9	1,861	1,262	1,861
<u>High receipts week:</u>								
A-----	20.1	14.7	34.8	-	34.8	1,804	-	1,804
B ² -----	-	-	-	-	-	-	-	-
C-----	17.6	12.3	29.9	-	29.9	458	-	458
D-----	9.7	6.2	15.9	-	15.9	1,329	-	1,329
G-----	12.3	10.1	22.4	-	22.4	704	-	704
H-----	(2)	(2)	44.8	-	44.8	105	-	105
K-----	30.4	14.5	44.9	45.0	³ 45.0	126	54	180
L-----	30.6	11.4	42.0	-	42.0	843	-	843
M-----	14.7	6.8	21.5	37.6	³ 31.6	878	1,508	2,386
N-----	17.1	19.4	36.5	-	36.5	945	-	945
O-----	17.8	14.8	32.6	-	32.6	2,442	-	2,442
P-----	⁴ 18.0	⁴ 32.9	⁴ 50.9	32.3	³ 34.1	⁴ 75	683	758
Average ⁵ -----	18.9	12.2	32.5	38.3	33.6	963	748	1,087
Range:								
Low-----	9.7	6.2	15.9	32.3	15.9	105	54	105
High-----	30.6	19.4	44.9	45.0	45.0	2,442	1,508	2,442

¹Cost or charge to association or association patrons.²Data not available.³Weighted average of figures for association and contract trucks.⁴Not included in average or range because of small volume collected by association trucks.⁵Unweighted average of vertical column excluding association P where indicated by 4/.

Table 45. - Delivering eggs to buyers: Direct costs and eggs delivered, 11 North Central associations, two 1-week periods, 1950-51

Associations performing operation	Delivering costs					Eggs delivered		
	Association trucks			Contract trucks ¹	Total	Associa- tion trucks	Contract trucks	Total
	Direct labor	Truck oper- ating	Total					
	<i>Cents per case</i>					<i>Cases</i>		
<u>Low receipts week:</u>								
B-----	-	-	-	92.7	92.7	-	368	368
C-----	² 12.5	² 65.3	² 77.8	-	77.8	824	-	824
E-----	-	-	-	92.7	92.7	-	416	416
F-----	6.6	6.9	13.5	-	13.5	1,358	-	1,358
J-----	-	-	-	107.6	107.6	-	406	406
K-----	-	-	-	21.7	21.7	-	378	378
L-----	-	-	-	97.9	97.9	-	254	254
N ⁵ -----	15.0	4.1	19.1	-	19.1	73	-	73
O-----	12.4	12.7	25.1	-	25.1	1,417	-	1,417
Average ³ -----	10.5	28.3	38.8	82.5	66.1	1,200	364	678
Range:								
Low-----	6.6	6.9	13.5	21.7	13.5	824	254	254
High-----	12.5	65.3	77.8	107.6	107.6	1,417	416	1,417
<u>High receipts week:</u>								
C-----	² 17.3	² 65.3	² 82.6	105.0	⁴ 93.9	615	624	1,239
F-----	5.5	5.5	11.0	-	11.0	1,527	-	1,527
J-----	-	-	-	94.5	94.5	-	512	512
L-----	-	-	-	97.9	97.9	-	546	546
M-----	7.1	12.0	19.1	-	19.1	222	-	222
N-----	9.2	3.3	12.5	-	12.5	239	-	239
O-----	7.3	7.5	14.8	-	14.8	2,371	-	2,371
P-----	⁵ 11.5	⁵ 20.4	⁵ 31.9	20.7	⁴ 21.9	⁵ 81	712	793
Average ⁶ -----	9.3	18.7	28.0	79.5	45.7	995	599	931
Range:								
Low-----	5.5	3.3	11.0	20.7	11.0	222	512	222
High-----	17.3	65.3	82.6	105.0	97.9	2,371	712	2,371

¹Cost or charge, including rail shipments, to association patrons.

²Cost is relatively high because of the long distance that eggs were hauled.

³Unweighted average.

⁴Weighted average of figures for association and contract trucks.

⁵Not included in average or range because of small volume delivered by association trucks.

⁶Unweighted average of vertical column excluding associations N and P where indicated by 5/

